



U.S. Business Involvement in Southern Africa, Part II

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U.S. Business Involvement in Southern Africa, Part II

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U.S. BUSINESS INVOLVEMENT IN SOUTHERN AFRICA

HEARINGS
BEFORE THE
SUBCOMMITTEE ON AFRICA
OF THE
COMMITTEE ON FOREIGN AFFAIRS
HOUSE OF REPRESENTATIVES
NINETY-SECOND CONGRESS
FIRST SESSION

PART 2

SEPTEMBER 27, NOVEMBER 12, DECEMBER 6 AND 7, 1971

Printed for the use of the Committee on Foreign Affairs



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U.S. BUSINESS INVOLVEMENT IN SOUTHERN AFRICA

MONDAY, SEPTEMBER 27, 1971

HOUSE OF REPRESENTATIVES,
COMMITTEE ON FOREIGN AFFAIRS,
SUBCOMMITTEE ON AFRICA,
Washington, D.C.

The subcommittee met at 2:30 p.m. in room 2200, Rayburn House Office Building, Hon. Charles C. Diggs, Jr. (chairman of the subcommittee) presiding.

Mr. Diggs. The subcommittee will come to order.

The hearings of the Subcommittee on Africa on U.S. business involvement in southern Africa are being resumed this afternoon. You may recall that in July the hearings were suspended in order that the subcommittee might make a factfinding visit to various African countries, including the Republic of South Africa. This trip afforded the opportunity both for discussions with some of the representatives of American businesses in the Republic of South Africa and for on-the-ground observation of the employment practices and policies of American plants.

We also visited the NASA tracking station there, because of the conviction which we hold that the U.S. Government and its affiliates must set an example of fair employment practices if we expect to get some kind of response from private enterprise of significance.

At a minimum, pronouncements of abhorrence of apartheid must be implemented to the extent that U.S. Government adopts fair employment practices in its own facilities.

It is a matter of extreme concern to this committee that NASA in its appearance before this subcommittee on June 2 not only failed to provide any information on the employment policies and practices followed at the tracking station in South Africa—indicating an alarming indifference on the part of this Government to such vital problems—but, to date, NASA has not provided this information. (See page 231 of the appendix for exchange of letters between Chairman Diggs and the National Aeronautics and Space Administration regarding employment practices and standards with respect to the NASA Tracking Station in South Africa.)

For this reason, we have requested NASA to appear before us today to answer the questions put to it at the hearing on June 2 as well as matters raised during our visit at the station on August 18.

On our visit to American plants in South Africa and in our talks with their representatives, the communications gap between American headquarters and the local businesses was vividly apparent. I do not believe that American businessmen could go to South Africa and witness the practices of their businesses, the attitude of disinterest amount-

ing to callousness with respect to the majority of the people without returning with a determination to change these practices.

The U.S. Government must cease its indifference and take an active interest in the practices followed at its facilities and rectify with all dispatch the inequities which we observed there.

Not only the question of our Government practices while acting as an employer or business relative to this inquiry, but the support which the Government affords private businesses in the minority-ruled countries of southern Africa is germane to the subject matter of this investigation.

Accordingly, we have asked the Overseas Private Investment Corporation to appear here today to explain the policies of that agency and their implementation in southern Africa.

Appearing as witnesses are Mr. Willis H. Shapley, Associate Deputy Administrator, NASA, and Mr. Sheldon Gitelman who is with OPIC.

Mr. Gitelman, you may proceed, sir. Do you have a prepared statement?

STATEMENT OF SHELDON GITELMAN, DIRECTOR OF FINANCE FOR AFRICA, OVERSEAS PRIVATE INVESTMENT CORPORATION

BIOGRAPHY

Born: May 26, 1929—Minneapolis, Minnesota.

Married: Three Children.

Education: BSL (1950) University of Minnesota; LLB (1952) University of Minnesota; LL.M (1957) Georgetown University; MA (1967) Howard University (African Studies).

Private Experience: 1958–1961 Private practice of Law—(Cleveland, Ohio). 1961–1967 (a) Corporate General Counsel and (b) Investor in two joint ventures with Nigerians in Nigeria.

Government Experience: 1955–1958 Trial Attorney—Tax Division, Department of Justice. 1967 to February 1, 1970—Deputy Director and Acting Director, Office of Private Enterprise—Africa Bureau (A.I.D.). February 1, 1970 to present—Director, Africa Investment Projects Group, Office of Private Resources (A.I.D.). and Director, Finance—Africa, Overseas Private Investment Corporation.

Military: U.S. Air Force 1952–1954.

Mr. GITELMAN. Yes, I do.

Mr. Chairman and members, in response to your request I am pleased to be here to explain the status of the investment incentive programs of the Overseas Private Investment Corporation (OPIC) in the areas with which you are concerned. With me is Mr. Harry L. Freeman, our Vice President for Corporate Planning, and our legislative counsel, Mr. John C. L. Donaldson.

The investment incentive programs of OPIC are designed to promote economic development of developing countries through private investment. Its financing programs are intended to be self-sustaining, and its insurance—against expropriation, currency inconvertibility and war, revolution, or insurrection—is governed by prudent risk management.

The insurance is intended to reduce the substantial political disincentives to investment in developing countries, allowing investment opportunities to compete on a more nearly equal footing with those in advanced industrial countries such as those of Western Europe,

Canada, and Japan. OPIC guarantees of private loans—and under limited circumstances, equity investments—are aimed at making available, to important development projects, private capital on commercial terms, which otherwise would be unavailable, or available only on prohibitive terms. The main role of these guarantees is to provide development projects access to long-term U.S. private institutional lenders such as insurance companies, pension funds, and credit unions which cannot lend to projects in developing countries without a full guarantee of payment.

OPIC's small direct dollar-lending is made possible through its revolving Direct Investment Fund, which also serves as the capital of the Corporation. This fund enables OPIC to participate in important developmental projects for which its guarantee facility is not suitable.

In addition to these programs, OPIC operates investment encouragement programs under which OPIC shares the cost of studies of proposed projects by companies with the technical and financial ability to make the proposed investments.

OPIC does not offer any of its incentives to the investment of U.S. private capital and skills in the Republic of South Africa, in South-West Africa or Namibia, or in Rhodesia. This policy has not changed since I testified before you last year on the operations of our programs in Africa when they were under the administration of AID.

With respect to dependent territories of developed nations—including currently the Portuguese territories of Angola and Mozambique—OPIC considers applications for limited assistance in the form of insurance against the specific political risks of currency inconvertibility and expropriation. Thus, no financial assistance or insurance against war, revolution, and insurrection is offered to projects in such dependencies, nor are our preinvestment encouragement programs available in them.

Technically, investments in projects in Angola and Mozambique meeting OPIC's other eligibility requirements—particularly their contribution to the social and economic development of the people of those territories—might be eligible for insurance against the two risks cited above. As a matter of law and practice, OPIC operates under the policy guidance of the Secretary of State, and the Corporation's operating procedure with respect to applications for assistance to investments in the Portuguese territories is to refer them initially to the Department of State for foreign policy guidance.

The program of insurance against political risks dates back to 1948. Nations and dependent territories where this insurance is applicable change from time to time, depending on the status of their economic development. For example, in February 1970, the U.S. Government, with the concurrence of the Government of Portugal, terminated its investment insurance program in metropolitan Portugal on grounds that it no longer could be classified as "less developed." It was made clear at that time that investment insurance against inconvertibility and expropriation would continue to be available in the Portuguese territories of Angola and Mozambique only to projects of special development importance to the people of these territories, as well as which meet other OPIC eligibility requirements.

OPIC has no insurance outstanding in the territory of Mozambique. It has outstanding insurance covering two U.S. investments made in Angola in the early 1960's. One is a half million dollar investment in a tire manufacturing plant, the other a \$90,000 investment in a dried and frozen fish and fishmeal plant. There are no applications for insurance in either Angola or Mozambique at this time. This should be compared with OPIC's total current insurance in Africa of over \$350 million against all three political risks.

In the case of sovereign less developed nations which may to some degree be economically linked with neighboring states—including such African nations as Botswana, Lesotho, and Swaziland—OPIC operates its programs in order to benefit the people and economies of these sovereign countries, thereby contributing to the independence of their economies.

For example, OPIC has outstanding insurance covering \$2.2 million original investment in a copper and nickel mining project in Botswana—including coverage of its public shareholders—and our Board has approved insuring an additional \$30 million investment in the project, the total investment in which eventually will total \$120 million.

In Lesotho, OPIC is considering insuring and participating in the financing of a \$30 million investment in a diamond mine. These projects are expected to contribute to the building of an economic infrastructure of roads, dams, schools, houses, and medical and other public facilities in their host countries, and to account for substantial local employment, tax revenues, and earnings of foreign exchange.

In the nearly 6 months since the formal inauguration of OPIC as a separate Government corporation, with a joint public-private Board of Directors, OPIC has taken steps to balance and integrate its developmental and financial management objectives. The Board and management have:

1. Adopted project eligibility policies which put special emphasis on our requirements for both the commercial soundness of assisted projects and their contribution to social and economic development—including their effects on host country tax revenues, foreign exchange, employment and ecology.

2. Set more specific terms and conditions for the financing and insuring of large and/or sensitive projects, particularly in the natural resource area, which calls for greater risk-sharing by the investors.

3. Increased the fees charged on new investment insurance contracts (from a total of $1\frac{1}{8}$ percent to a total of 1.5 percent per annum for current coverage of all three risks) to supplement earnings and reserves.

4. Provided for intensive analysis and review of all insurance projects of \$10 million or more, and for Board review of all investment guarantees and dollar loans.

On the administrative side, OPIC is establishing new project inspection and monitoring procedures, and accounting and financial reporting systems which more accurately reflect the results of our operations. To assure financial integrity the corporation is audited twice each year—once by the AID Auditor General and once by the General Accounting Office.

OPIC's legislative authorities give it flexibility to assist "new modes" of investment increasingly welcomed in lower income countries—such as joint ventures, licensing agreements, management contracts, leasing ventures and public stock offerings in the host country.

OPIC guarantees and insurance are intended to assist smaller as well as larger investors, credit unions, other cooperatives and non-profit voluntary investment organizations.

OPIC is cooperating with other developed countries with programs comparable to OPIC's, and such international institutions as the World Bank's International Finance Corporation, the Development Assistance Committee of the OECD, the United Nations Industrial Development Organization (UNIDO) and the African multinational private investment institution, SIFIDA, to promote multilateral sharing of both investment financing and the risks attendant upon such investment.

Mr. Chairman, this completes our prepared statement. We would be pleased to answer any questions.

Mr. Diggs. Thank you very much.

On page 2 of your statement, you say that OPIC does not offer any of its incentives to the investment of U.S. private capital in South Africa, in Namibia, or in Rhodesia. Does this mean that we do not have any investment insurance, whether for expropriation, currency inconvertibility, or war or revolution or insurrection for South Africa, or Namibia and/or Southern Rhodesia?

Mr. GITELMAN. It means with respect to the Republic of South Africa, Namibia, and Rhodesia we have no programs at this time. In the case of Rhodesia, at the time of the breakup of the Central African Federation, at the time when there was still some hope of majority rule in Rhodesia, we did have an inconvertibility insurance program available, and there were at that time outstanding applications. As a result, there are presently some contracts which date back to that time, but in 1965 we terminated our program in Rhodesia.

Perhaps Mr. Freeman can answer the question with regard to what we have presently outstanding in Rhodesia.

STATEMENT OF HARRY L. FREEMAN, VICE PRESIDENT FOR CORPORATE PLANNING, OPIC

BIOGRAPHY

Harry L. Freeman was named to his present position with the Overseas Private Investment Corporation in January 1971. He had joined the Agency for International Development's Specific Risk Guaranty Division in 1966 as deputy chief.

A year later he was named (acting) chief of the Insurance Division, Private Investment Center, AID's former Office of Private Resources, OPIC's predecessor organization. In 1968 he was named director.

Mr. Freeman was named (acting) manager of Corporate Planning of OPIC in March 1970.

For nine years before entering government service he was an associate and then a partner in the law firm of Janin, Morgan, Brenner and Freeman. He was a law clerk for Judge W. E. Orr, U.S. Court of Appeals for the Ninth Circuit, San Francisco, California, 1956-57.

Mr. Freeman holds an A.B. degree from the University of Michigan and a law degree from Harvard Law School.

He is married, has four children and lives in Washington, D.C.

Mr. FREEMAN. Congressman, we have a series of contracts covering one project, an oil refinery in Southern Rhodesia. The contract was written under our agreement with the United Kingdom. You may recall that our authorizing statute requires us to have an agreement with various countries before we introduce and operate our programs.

As Mr. Gitelman said, we do not have a program in Rhodesia at this time as far as new projects are concerned, and have not had since 1965. The particular project, which is an oil refinery, was constructed before 1965.

We have contracts outstanding for three American companies, American Independent Oil, Caltex, and Mobil, as far as their interests in this particular refinery, and that is for inconvertibility insurance only.

Mr. DIGGS. Suppose someone comes in tomorrow and applies for an OPIC investment insurance program for South Africa. Would they be informed that this is contrary to present policy, and would their application be rejected forthwith?

Mr. GITELMAN. Yes, Mr. Chairman. They would be told that OPIC simply does not operate in South Africa.

Mr. DIGGS. With respect to South Africa, does OPIC offer investment guarantees for loans, or for other investments?

Mr. GITELMAN. Perhaps I should explain, Mr. Chairman, that South Africa is treated as a developed country by OPIC, and therefore no programs of any kind could or would be operated in South Africa.

Mr. DIGGS. This policy is clearly enunciated, and if you are asked about it, you say so?

Mr. GITELMAN. Yes. There can be no question about it.

Mr. DIGGS. You refer on page 2 to the OPIC small direct dollar-lending program. Is this available for investment in South Africa?

Mr. GITELMAN. No, Mr. Chairman, it is not.

Mr. DIGGS. Are any of the special activities of OPIC available to applicants for investments in South Africa?

Mr. GITELMAN. No; they are not, Mr. Chairman.

Mr. DIGGS. To sum up, are there any programs which may be eligible for investment projects in South Africa?

Mr. GITELMAN. There are no OPIC programs of any kind available in South Africa.

Mr. DIGGS. Turning to the so-called Portuguese territories, I understand that OPIC does offer investment insurance to investors in the so-called Portuguese territories, Angola and Mozambique. You state that the specific risks which you will insure are political risks against currency inconvertibility and expropriation.

Mr. GITELMAN. Yes, Mr. Chairman. Those two coverages could technically be written by OPIC at this time.

Mr. DIGGS. The question is expropriation by whom, by the Portuguese Government or by any government, including the liberation elements should they come to power?

Mr. GITELMAN. It would be expropriation by any power as defined in the insurance contract.

Mr. DIGGS. By any what?

Mr. GITELMAN. By any power as defined in the insurance contract.

Mr. DIGGS. Last year, Mr. Gitelman, when you testified before the committee, you stated, "Of course, none of our programs are involved in southern Africa."

When did OPIC change its policy and begin to consider applications for insurance against expropriation?

Mr. GITELMAN. It has not. If I recall correctly, I said in South Africa, because the policy regarding Angola and Mozambique has been the same for a long time.

Mr. DIGGS. What is the rationale for offering to investors in Angola and Mozambique insurance against political risks? What are your guidelines there?

Mr. GITELMAN. Would you care to cover that, Harry?

Mr. FREEMAN. Yes. I think our guidelines would be generally the same as with any other territory; namely, to see if any particular U.S. investor who comes to us is desirous of political risk insurance, and then to assess the potential contribution of the project to the economy and the people of that particular territory.

We have been operating in Angola and Mozambique as part of our program with Portugal for over 10 years. We terminated the program, as Mr. Gitelman said earlier, in Metropolitan Portugal, because we no longer classified it as a developing country. That left us with the authority, technically speaking, to operate in its dependent territories abroad.

We have no present applications, nor have we had any inquiries recently with respect to these territories. Should we get any, I think we would have to make a judgment as to the particular project and its potential developmental contribution at that time in the light of the circumstances then prevailing, and we would rely very strongly on the provision in our law, section 231 (f), which provides that OPIC can only support those projects which are responsive to the needs and development of the people of the host country.

We would have to look at all the facts and circumstances with respect to the project.

Mr. DIGGS. You indicated that all OPIC programs with the limited exception of insurance against war and revolution and insurrection are available for investment in projects in Angola and Mozambique.

Mr. GITELMAN. No, Mr. Chairman, only coverages of the political risks of expropriation and inconvertibility. The political risk coverage of war, revolution and insurrection is not available. We do not finance projects in Angola and Mozambique, and none of our investment encouragement program is available to encourage companies to seek out projects in Angola and Mozambique.

Mr. DIGGS. That would mean that investment guarantees for private loans and equity investment are not available?

Mr. GITELMAN. That is correct.

Mr. DIGGS. And direct dollar-lending is not available?

Mr. GITELMAN. That is correct, also.

Mr. DIGGS. Investment encouragement through financial participation or incentive grants or otherwise, would this be available?

Mr. GITELMAN. No, Mr. Chairman, it would not be.

Mr. DIGGS. The OPIC special activities of administering and managing special projects and programs including programs of financial advisory support?

Mr. GITELMAN. They are not available in those dependencies, either.

Mr. DIGGS. I yield to the gentleman from Pennsylvania, Mr. Nix.

Mr. NIX. Thank you, Mr. Chairman. Did I understand you to say that the investment opportunities were not available to Angola and Mozambique?

Mr. GITELMAN. The investment encouragement programs are not available—only the political risk coverages of expropriation and inconvertibility.

Mr. NIX. Would you describe the investment encouragement program?

Mr. GITELMAN. Yes, sir. Under the investment encouragement program which we operate, OPIC shares the costs incurred by companies seeking to survey a project in a developing country.

Mr. NIX. The cost of survey?

Mr. GITELMAN. The cost of doing a feasibility study by the company. We do this to encourage companies to take a look at projects in developing countries. That program is not available in Angola or Mozambique.

Mr. NIX. Which programs are available?

Mr. GITELMAN. The only programs that are available in Angola and Mozambique are the insurance program against inconvertibility of currency and the insurance program against expropriation of property.

Mr. NIX. What is the total amount invested of American capital, invested in those two countries?

Mr. GITELMAN. I don't have those figures available to me. We can get them for you if you wish.

Mr. NIX. What control do you have over the businesses enjoying the benefits of investment in those two countries?

Mr. FREEMAN. In response to your previous question, I understand that direct U.S. investment in Angola is around \$206.5 million, and in Mozambique around \$10 million.

With respect to your question as to what control OPIC has over investments which receive its incentives, I think the answer would be that there is no control over the business operations, although we do exercise some influence on behalf of policies we believe to be sound and developmental. Of course, we have no connection whatever with investment in these countries which do not receive OPIC incentives. I should add that we have two contracts of insurance as described by Mr. Gitelman outstanding which were issued by AID under the predecessor program in Angola, and those are for projects against risk of inconvertibility and expropriation.

But we now have no applications with respect to projects in Angola.

Mr. NIX. As to the funds already invested, do you have the authority to inquire into whether or not there is a disparity in the wage paid to black and white employees of the companies involved?

Mr. FREEMAN. With respect to making such inquiries, I do not think we have the legal power to raise that question or to condition outstanding insurance coverage upon the answer to it under the contracts which we issued at that time. We could, of course, make inquiries informally.

Our present practice, I might say, would be to raise that type of question when an investor makes his original application, and to require him to make representations as to how the project might benefit the local economy.

Mr. NIX. Did you ever make an investigation to determine whether or not the answers that you initially received were correct?

Mr. FREEMAN. In general? We have in some areas, yes, sir.

Mr. NIX. Particularly where?

Mr. FREEMAN. When I say "areas," I don't mean geographic areas, but rather the development contributions of particular projects from time to time.

Mr. NIX. I am confining myself to Angola and Mozambique.

Mr. FREEMAN. We haven't made any current inquiries as to wage differentials.

Mr. NIX. The basic objective of OPIC is to make money for private investors who put it up; is that correct?

Mr. FREEMAN. No; OPIC's basic motive in any country in which we operate anywhere in the developing world, would be to contribute to the development of those countries by encouraging constructive private investment projects from this country.

Mr. NIX. You are not telling me that the American private investor is more interested in developing a country, whether Africa or any other place in the world, than he is in making a profit? Certainly you don't mean that.

Mr. FREEMAN. No; that is not quite what I said.

Mr. NIX. Certainly not.

Mr. FREEMAN. A private business motive is profit, but I think economic development of developing countries can come from profitable enterprises.

Mr. NIX. Of course, it can, but I am talking about a different subject altogether.

What I am trying to get at is this: OPIC came out of a committee which I chaired, and that was one of my concerns then. Are you going to go about business investing money in these countries in the same manner in which we have done it all over the world, or are we going to invest money in countries where there is a definite and reasonable chance of all of the people, or any of the people of that particular country receiving an equal return from the investment in the way of wages?

Mr. FREEMAN. I think, Congressman Nix, that we have gone a long way in the last few years, particularly in the creation of OPIC and particularly in the OPIC legislation which we are administering. You will undoubtedly recall, and I recall testifying with Mr. Salzman, 2 years ago before you, there was a mutual concern as to the development and economic benefit of particular projects. The committee, as I recall, wrote in that part of the legislation to which I referred earlier about the project being responsive to the needs of both economic and social development of the people of the host country.

We have enlarged our own capacity for this type of analysis, broadened the types of questions that we ask investors, put more conditions on obtaining public assistance to try to assure ourselves and the Congress that projects are going to make a constructive contribution.

At some point, however, we have to make a judgment on each project as to whether it will, or will not, make such a contribution, and decide to issue a contract or not.

Mr. GITELMAN. I would like, if I might, Mr. Nix, to address your question with respect to what we are doing in Africa. I would like to assure you, that when we consider projects in Africa, we are concerned about the developmental aspects. Certainly companies are interested in making a profit, and we are all well aware of it, and we are all well aware that OPIC has another goal as well.

In Africa the \$2.2 million coverage in Botswana, covering public shareholders, is the first and, to date, only such case. We did that because we felt it was important.

In the case of the Lesotho project I mentioned, the company came to us prior to the exploration stage, and while we don't try to dictate terms with respect to a private investor, we went to great pains to be sure that the Government of Lesotho was well represented in the concession negotiations.

We have gone on the line early with respect to being sure they were well represented, and in being sure, for example, that there would be no harmful ecological problems. In Africa we have financed the only leasing company which has ever been assisted by OPIC. One of the reasons we did it was that the objective of this leasing company is to help finance African entrepreneurs, and we felt this was one way OPIC could get at a problem that it might not otherwise be able to.

While I can't talk in generalities, I would like to assure you with regard to specifics.

Mr. NIX. There is one other thing I want to ask about. Some time ago I suggested, not to you specifically, but suggested that in your contractual relationship you certainly could reserve to yourselves the right to take care of the concern that I have, and I wondered whether or not any progress had been made or any thought given to the desirability of reserving to this agency the right to oversee in certain areas.

Mr. GITELMAN. Let me try to answer that, Mr. Congressman.

We have looked at that, and we are continuing to, and it poses a very difficult problem for us, particularly in the area of political risk insurance. The problem is this: We can examine the representations, we can examine what the investor proposes to do, we can talk with our people in the State Department, in the field and get all of the facts on a projected basis.

However, in political risk insurance, expropriation in particular, once you issue a contract it is particularly difficult to put in a condition, and the condition would necessarily have to be rather vague, which would give us the legal power to get out of a particular obligation.

We would have great difficulty in providing a basic incentive for the investor to go abroad if he has, indeed, a good project, a constructive project, if we, OPIC, can find what might be conceived as a loophole.

Mr. NIX. I don't agree with you, of course, about the difficulty of putting such provisions in contracts. I do believe, however, that you are doing everything that you think ought to be done. It is not what I think ought to be done.

Thank you, Mr. Chairman.

Mr. DIGGS. Mr. Fulton is not a member of the subcommittee unfortunately. He is a member of the full committee and is a welcome participant in our proceedings here this afternoon. Do you have any questions for the witness, Mr. Fulton?

I yield to the gentleman.

Mr. FULTON. I would like to compliment OPIC on its good start and to see that it is emphasizing investment in the developing countries of Africa.

For example, the total in Africa is a proportion of your total investment. What proportion is that? It is \$350 million of its total current insurance against all three political risks.

Mr. FREEMAN. With respect to the investment insurance program, Africa—I don't have the percentage, but our—

Mr. FULTON. Just about what proportion is it?

Mr. FREEMAN. Let's see.

Mr. FULTON. You can supply it for the record.

Mr. FREEMAN. I will be happy to. It would be a small percentage, Congressman, because for expropriation, for example, the amount in force right now—or as of June 30, 1971—would be approximately \$195 million out of \$2.5 billion. So that would indicate it would be less than 10 percent—say, 7 percent.

(The material referred to follows:)

Q. What proportion of OPIC's world-wide insurance coverage is represented by outstanding insurance in Africa?

A. As of June 30, 1971, insurance outstanding in Africa, as a percent of total outstanding, was as follows:

Coverage:	<i>Percent of worldwide coverage</i>
Expropriation	7.4
War, revolution, or insurrection.....	5.3
Inconvertibility	9.6

Mr. FULTON. On the new insurance, how does it compare? Because Africa is just a newly developing continent, so that, of course, the contracts of insurance that have been previously made are largely in other areas.

Mr. FREEMAN. For the fiscal year ending June 30, 1971, Congressman, in the insurance program we insured 17 projects in Africa out of a worldwide total of 174, which would be approximately 10 percent.

Mr. FULTON. Do you think that is a good percentage of investment in the continent of Africa, or do you expect it to go higher?

Mr. GUTELMAN. Well, I believe, Congressman, that at present, Africa—American investment in Africa—is probably less than 10 percent of total American investment abroad. U.S. investment in black Africa is about 5 percent of total American investment in the developing countries.

We think it is increasing slowly on the basis of experience with our investment encouragement programs. We are emphasizing Africa there, particularly in a program we have designed to encourage agribusiness companies to invest in Africa, and I think the percentage of such projects in Africa as opposed to all projects is probably substantially higher than 10 percent of all the projects. It probably is closer to 20 or 25 percent.

We are constantly trying to improve our record in Africa.

Mr. FULTON. The two contracts of insurance that now exist have been in existence for some time, have they not?

Mr. FREEMAN. I am sorry. Which contracts are you referring to?

Mr. FULTON. One is the investment in the tire manufacturing plant, and the other is the \$90,000 investment in a dried frozen fish and fishmeal plant. How long have they been in existence?

Mr. FREEMAN. The contract, or the investment?

Mr. FULTON. The guarantee.

Mr. FREEMAN. The contract of insurance was issued with respect to the fishmeal plant in 1964. The contract of insurance with respect to the tire plant was not issued until April of 1970. However, the investment was made several years prior to that time.

Mr. FULTON. My point is that once the contracts have been made, then the U.S. Government has to live up to those contracts. Is that not true?

Mr. FREEMAN. Yes, sir.

Mr. FULTON. The question is on your losses in Africa. What is that history?

Mr. GITELMAN. I defer to Mr. Freeman.

Mr. FREEMAN. We paid one expropriation claim, Congressman. That was for—

Mr. FULTON. Where and for how much?

Mr. FREEMAN. In Nigeria, for \$2.7 million. This was incident to the civil war approximately 3 years ago. It was for a textile mill in the eastern area.

Mr. FULTON. Is that the only expropriation claim for revolution or war or any other claim?

Mr. FREEMAN. That is the only claim that we have paid. I am sorry. Excuse me, Congressman.

On the insurance program, we administered the payment under the old extended risk guarantee program of AID, a claim paid in the amount of \$111,000 in Somalia in 1968.

Mr. FULTON. What is your history then of the profitability of loans in Africa compared to your losses?

Mr. FREEMAN. I was speaking of losses.

Mr. FULTON. What is your income and outgo on premiums?

Mr. FREEMAN. I would like to supply the figures for the record, Mr. Congressman.

Mr. DIGGS. Without objection.

(The material referred to follows:)

Q. What is OPIC's income and outgo in premiums in Africa?

A. Fees collected on African projects (as of July 31, 1971) -----	\$16, 749, 927
Insurance -----	16, 659, 975
Guarantees -----	89, 952
<hr/>	
Claims paid on African projects (as of July 31, 1971) -----	2, 997, 917
<hr/>	
Insurance:	
Congo -----	90, 343
Nigeria -----	2, 700, 000
Liberia -----	185, 000
Guarantees: Somali Republic -----	111, 160
<hr/>	
Gross claim payments -----	3, 068, 503
Less recoveries -----	158, 586

Mr. FREEMAN. I was speaking of insurance, and not with respect to loans.

Mr. FULTON. I am speaking of everything. You are operating as if you were a bank, and I want to know what the history of your operations are in this one area.

Mr. FREEMAN. We would be pleased to submit that for the record.

Mr. FULTON. It is brought up in your statement on page 6 that you have increased the fees for current coverage of all three of these risks. You then state that this is for the purpose of supplementing earnings and reserves.

So, having come from a banking corporation law firm, I am naturally inquiring what is happening on your earnings and what is happening on your reserves. So could you supply that for the record, with the chairman's permission?

Mr. FREEMAN. We would be pleased to.

(The information requested follows:)

As of June 30, 1971, OPIC's net earnings—after deduction of administrative expenses and preinvestment assistance costs—were \$25,990,183, exclusive of claims settlements in the net amount of \$68,421. This compares with a net income of \$21,287,251 for the fiscal year 1970.

As of June 30, 1971, OPIC's total capital and reserves aggregated \$207,724,126, as compared to \$143,052,364 in fiscal 1970. Of this, \$70 million was allocated by the OPIC Board of Directors to the insurance reserve; \$70 million to the guaranty reserve; and \$27,724,126 was retained in unallocated earnings.

Mr. FULTON. Why is this increase being made? Is it for Africa alone that premiums are being increased, or is it worldwide?

Mr. FREEMAN. The increase is worldwide, and was made after a meeting of the board of directors in March of this year after a review of our projected revenues and all other appropriate factors.

Mr. FULTON. Would you put in the record, with the chairman's permission, where you are using the services of OPIC on any one of the programs in countries that are either dictatorships or military governments, or deny the full rights to everybody, every citizen, regardless of race, creed, or national origin? Would you put that in the record?

Mr. FREEMAN. We can supply a list of countries and areas where we operate. OPIC is not a foreign policymaking agency.

Mr. FULTON. Without the policy, just submit us the facts.

(The information requested follows:)

OVERSEAS PRIVATE INVESTMENT CORPORATION (AN AGENCY OF THE U.S. GOVERNMENT)

[Country list investment insurance and investment guaranty program, June 1, 1971. The OPIC Investment Insurance and Investment Guaranty Programs are available, as of this date, in the following listed less-developed countries and semi-independent states, as noted.]

Investment Insurance			
Convertibility	Expropriation	War, revolution and insurrection	Investment guarantees extended risk
Afghanistan	Afghanistan	Afghanistan (war only)	
Antigua	Antigua	Antigua	Antigua.
Argentina ¹			
Barbados	Barbados	Barbados	Barbados.
Botswana	Botswana	Botswana	Botswana.
Brazil	Brazil	Brazil	Brazil.
British Honduras	British Honduras	British Honduras	British Honduras.
Burundi	Burundi	Burundi	Burundi.
Cameroon	Cameroon	Cameroon	Cameroon.
Central African Republic	Central African Republic	Central African Republic	Central African Republic.
Ceylon	Ceylon	Ceylon	Ceylon.
Chad	Chad	Chad	Chad.
China, Republic of	China, Republic of	China, Republic of	China, Republic of.
Colombia	Colombia	Colombia	Colombia.
Congo (Kinshasa)	Congo (Kinshasa)	Congo (Kinshasa)	Congo (Kinshasa).
Costa Rica	Costa Rica	Costa Rica	Costa Rica.
Cyprus ¹	Cyprus ¹	Cyprus ¹	Cyprus ¹ .

See footnote at end of table, p. 14.

OVERSEAS PRIVATE INVESTMENT CORPORATION (AN AGENCY OF THE U.S. GOVERNMENT)—Continued

[Country list investment insurance and investment guaranty program, June 1, 1971. The OPIC Investment Insurance and Investment Guaranty Programs are available, as of this date, in the following listed less-developed countries and semi-independent states, as noted.]

Investment Insurance			
Convertibility	Expropriation	War, revolution and insurrection	Investment guarantees extended risk
Dahomey	Dahomey	Dahomey	Dahomey.
Dominica	Dominica	Dominica	Dominica.
Dominican Republic	Dominican Republic	Dominican Republic	Dominican Republic.
Ecuador	Ecuador	Ecuador	Ecuador.
El Salvador	El Salvador		
Ethiopia	Ethiopia	Ethiopia	Ethiopia.
Gabon	Gabon	Gabon	Gabon.
Gambia	Gambia	Gambia	Gambia.
Ghana	Ghana	Ghana	Ghana.
Greece	Greece	Greece	Greece.
Grenada	Grenada	Grenada	Grenada.
Guatemala ¹	Guatemala ¹		
Guinea	Guinea	Guinea	Guinea.
Guyana	Guyana	Guyana	Guyana.
Haiti	Haiti	Haiti	Haiti.
Honduras	Honduras	Honduras	Honduras.
India	India	India	India.
Indonesia	Indonesia	Indonesia	Indonesia.
Iran	Iran	Iran	Iran.
Israel	Israel	Israel	Israel.
Ivory Coast	Ivory Coast	Ivory Coast	Ivory Coast.
Nigeria	Nigeria		
Pakistan	Pakistan	Pakistan	Pakistan.
Panama	Panama	Panama (war only)	
Paraguay	Paraguay	Paraguay	Paraguay.
Philippines	Philippines	Philippines	Philippines.
Rwanda	Rwanda	Rwanda	Rwanda.
St. Christ-Nevis-Anguilla	St. Christ-Nevis-Anguilla	St. Christ-Nevis-Anguilla	St. Christ-Nevis-Anguilla.
St. Lucia	St. Lucia	St. Lucia	St. Lucia.
Senegal	Senegal	Senegal	Senegal.
Sierra Leone	Sierra Leone	Sierra Leone	Sierra Leone.
Singapore	Singapore	Singapore	Singapore.
Somali Republic ¹	Somali Republic ¹	Somali Republic ¹	Somali Republic ¹ .
Sudan	Sudan ¹	Sudan ¹	Sudan ¹ .
Swaziland	Swaziland	Swaziland	Swaziland.
Tanzania (excluding Zanzibar)	Tanzania (excluding Zanzibar)	Tanzania (excluding Zanzibar)	Tanzania (excluding Zanzibar).
Thailand	Thailand	Thailand	Thailand.
Jamaica	Jamaica	Jamaica	Jamaica.
Jordan	Jordan	Jordan	Jordan.
Kenya	Kenya	Kenya	Kenya.
Korea	Korea	Korea	Korea.
Laos	Laos	Laos	Laos.
Lesotho	Lesotho	Lesotho	Lesotho.
Liberia	Liberia	Liberia	Liberia.
Malagasy	Malagasy	Malagasy	Malagasy.
Malawi	Malawi	Malawi	Malawi.
Malaysia	Malaysia	Malaysia	Malaysia.
Mali	Mali	Mali	Mali.
Malta ¹	Malta ¹	Malta ¹	Malta ¹ .
Mauritania ¹	Mauritania ¹	Mauritania ¹	Mauritania ¹ .
Mauritius	Mauritius	Mauritius	Mauritius.
Morocco	Morocco	Morocco	Morocco.
Nepal	Nepal	Nepal	Nepal.
Nicaragua	Nicaragua	Nicaragua	Nicaragua.
Niger	Niger	Niger	Niger.
Togo	Togo	Togo	Togo.
Trinidad-Tobago	Trinidad-Tobago	Trinidad-Tobago	Trinidad-Tobago.
Tunisia	Tunisia	Tunisia	Tunisia.
Turkey	Turkey	Turkey	Turkey.
United Arab Republic (Egypt) ¹	United Arab Republic (Egypt) ¹	United Arab Republic (Egypt) ¹	United Arab Republic (Egypt) ¹ .
Uganda	Uganda	Uganda	Uganda.
Upper Volta	Upper Volta	Upper Volta	Upper Volta.
Venezuela	Venezuela	Venezuela	Venezuela.
Vietnam	Vietnam	Vietnam	Vietnam.
Western Samoa	Western Samoa	Western Samoa	Western Samoa.
Yugoslavia ¹	Yugoslavia ¹		
Zambia	Zambia	Zambia	Zambia.

¹ Program currently inoperative for legal or administrative reasons. Changes: Argentina (convertibility) - inoperative.

Note: Economically developed countries are excluded from the OPIC investment incentive programs. Investment insurance against inconvertibility and expropriation only may be available for some of the underdeveloped dependencies of France, The Netherlands, Portugal, and the United Kingdom.

Mr. FULTON. Thank you, Mr. Chairman.

Mr. DIGGS. Does counsel have any questions?

Mrs. BUTCHER. You used the term "Metropolitan Portugal." What does this mean with respect to your acceptance of the claim of Government of Portugal, that Portugal comprises so-called Metropolitan Portugal and the territories under its domination?

Mr. GITELMAN. I understand your question, and I understand the context in which you ask it, but I don't feel I am in a position to make the political judgment as to what constitutes Metropolitan Portugal. As I indicated in my statement, we referred to Metropolitan Portugal for the purposes stated.

Mrs. BUTCHER. Has the foreign policy organ of our Government decided this is the concept to be used?

Mr. GITELMAN. I am afraid I can't answer that question.

Mrs. BUTCHER. That is all, Mr. Chairman.

Mr. DIGGS. Thank you, gentlemen.

I now call to the witness chair Mr. Willis Shapley, Associate Deputy Administrator of the National Aeronautics and Space Administration.

STATEMENT OF WILLIS H. SHAPLEY, ASSOCIATE DEPUTY ADMINISTRATOR, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

BIOGRAPHY

Willis H. Shapley, Associate Deputy Administrator, serves as a principal assistant to the Administrator and Deputy Administrator of NASA. His specific duties include supervision of the functional staff offices for Public Affairs, Congressional Affairs, International Affairs, and Department of Defense and Inter-agency Affairs.

Prior to joining NASA on Sept. 1, 1965, Shapley served as Deputy Chief of the Military Division of the Bureau of the Budget, which he joined in 1942. His assignments dealt with defense programs, especially military research and development, and with aeronautics and space programs. In addition to that work, he served as special assistant to the Director for space program coordination.

Shapley was born in 1917 in Pasadena, Calif. He attended Harvard College and the University of Chicago, and received an A.B. degree from Chicago in 1938. From 1938 to 1942 he did graduate work and research in political science and related fields at the University of Chicago.

He has received the Rockefeller Public Service Award (1956), the Bureau of the Budget Director's Exceptional Service Award (1963), and NASA's Distinguished Service Medal (1969). He is a member of Phi Beta Kappa and the author of papers relating to research and development, and space programs.

Mr. and Mrs. Shapley (the former Virginia Bishop) reside at 3040 P Street, N.W., Washington, D.C. They have two daughters, Sarah of Philadelphia, Pa., and Deborah of Boston, Mass.

Mr. SHAPLEY. With me here is Mr. Gerald Truszynski, Associate Administrator for Tracking and Data Acquisition, who appeared before this subcommittee a few weeks ago.

Mr. FULTON. May I welcome Dr. Shapley, too, and say that on his background he is son of the Dr. Shapley, head of the Harvard Observatory, whom I have admired for many years, and who is outstanding and known worldwide in astronomy. We are very proud to have the son of that man here.

Mr. DIGGS. We might note that the gentleman from Pennsylvania is the ranking minority member of the House Science and Astronautics

Committee, and is well acquainted with the administration of this agency.

Mr. FULTON. Off the record.

(Discussion off the record.)

Mr. DIGGS. The gentleman may proceed.

Mr. SHAPLEY. Thank you, Mr. Chairman.

Mr. Chairman and members of the subcommittee: I am pleased to be here today to submit replies to specific questions this subcommittee has asked regarding the operation of the NASA tracking station in South Africa. These replies are appended to my statement. I regret that it was not possible to respond earlier, but we thought it more useful to wait until we were able to address the sum of your questions on the basis of information we had to request and have now received from the South African Council for Scientific and Industrial Research (CSIR).

To provide context for the discussions today, I would like briefly to review the evolution of our station in South Africa. It was established there under cooperative arrangements with the U.S. Naval Research Laboratory, in anticipation of the International Geophysical Year, some years before Congress created NASA. In 1960 NASA took over the station under the terms of an intergovernmental agreement negotiated by the Department of State and implementing interagency agreements with CSIR, which is an agency of the South African Government. (See p. 244 of the appendix for the text of the National Aeronautics and Space Administration Contracts and Agreements with the Council for Scientific and Industrial Research in South Africa regarding the NASA programs in South Africa as well as the agreement between the Government of the United States of America and the Government of the Union of South Africa concerning Tracking Stations.) The station has been and remains a necessary element of our national space program.

We are in South Africa by the leave of the South African Government, which grants us access to its territory, permits us to use radio frequencies of its registration, and allows us to bring all materials, equipment, and supplies duty free.

The NASA station in South Africa is fully manned, staffed and operated by CSIR with South African employees. There is nothing unique in this. We have similar staffing and operating arrangements with cooperating agencies in Australia, the United Kingdom, and Spain. In each of these countries the responsible national agencies hire local personnel and operate the stations in accord with local laws and regulations.

Committed as we have been and are to attaining the important national objectives entrusted to us, we have thought of our stations overseas essentially in terms of their efficiency in supporting our flight missions. We have monitored station operations mainly from the standpoint of technical effectiveness and sound financial management.

While we have recognized that human factors can have a direct bearing on performance, and are important in their own right, we are limited in our ability to control these factors, particularly in societies where statutes and practices differ markedly from our own.

Within the legal structure in South Africa and within our authority as a U.S. Government agency we do intend to make a special effort

to effect improvements in the nontechnical aspects of our station operations. As part of this process, we will explore very practically with CSIR what can be done to improve the working and living conditions and the opportunities of black employees at the station. We wish to do all we can to see that the NASA station in South Africa reflects to the greatest degree that local circumstance permit the practices and ideals which govern employment at our domestic facilities.

Mr. Chairman, this concludes my statement.

With your permission, I will now proceed with the answers that NASA has obtained to the questions previously raised by the subcommittee to which answers have not been previously furnished to you.¹

The first question in this category was: Does the CSIR contribute to the South African Foundation to your knowledge?

NASA has not been able to determine whether CSIR contributes to the South African Foundation. However, funds provided to the CSIR under the NASA contract are limited to reimbursement for direct services solely in connection with the operation and maintenance of the tracking station.

The next question is: Does the CSIR do military work or work of strategic scientific value for the South African Government? Could you provide for the record a report of all of the activities of the Council, because obviously there is some suggestion that they are quite broad and include a whole range of activities that it might be interesting to examine the relationship to the objectives of the subcommittee.

The answer is as follows: We are informed that the CSIR is a statutory body operating 13 institutes grouped according to scientific and research disciplines. One of these is the National Institute for Defense Research, which, unlike other institutes, reports directly to the Defense Research Council. The other institutes report directly to the CSIR and are engaged in research activities relating to food, physics, mechanical engineering, mathematical sciences, et cetera. The CSIR institute responsible for our tracking station operations is the National Institute for Telecommunications Research. The tracking station and its personnel are fully divorced from military research.^{1a}

The next series of questions, Mr. Chairman, referred to the work force at the station. With your permission I will not read the entire question and will proceed directly with the answer.

Mr. Diggs. You may proceed. The question will be considered part of the record.

Mr. SHAPLEY. Thank you, Mr. Chairman.

Question: We would like to know about the work force. We would like to know about the number of Africans there, the percentage of their salaries. That is of the payroll and how the Council arrives at the salaries to be paid to Africans. We would like to know if there is any collective bargaining. We would like to know if the wages paid to Africans is below the breadline, that is, what they call the poverty datum line. We would like to know the beginning salary for Africans at the station compared to the beginning salary for whites. We would like to know how the top salary for Africans and Coloureds compare with the

¹ See Vol. I, pp. 143-151, for the original questions raised by the subcommittee and pp. 241-243 of this volume for further correspondence concerning these inquiries.

^{1a} The subcommittee is also including in the appendix, p. 270, the official brochure on CSIR.

bottom salary of whites. For the record we would like a complete presentation on all salaries paid to all workers at the station since their beginning. One thing we would like to see is how the raises in salaries over the years compare for these groups and whether the African salaries have kept pace with the white salaries, the average cash differentials in these salaries.

Response: There are approximately 61 black employees of the CSIR at the station, representing about 21 percent of the total staff. I should add that the other 225 employees are the technical staff of the station.

South African Government wage scales and classifications set by the South African Public Service Commission are applied by the CSIR. There is no collective bargaining.

Since the beginning of our current operations in 1960 and through June 1971, the total amount of salaries paid to all employees, white and black (including pension, unemployment insurance, and medical benefits), has amounted to approximately \$9,496,000. The information we received from CSIR did not include a breakdown of this total. The breakdown between white and black employees for fiscal year 1971 is as follows:

	Whites	Blacks
Salaries	\$1,426,000	\$57,600
Pension	105,000	2,300
Unemployment insurance	511	136
Medical	26,500	

The CSIR pays half of the costs of medical aid membership for the white technical staff. Those are the payments shown in the statement. The black employees do not have a medical society, but receive treatment in nearby provincial hospitals at an extremely small fee (a few cents). The CSIR provides transportation free of charge for medical attention or other health emergencies.

Since all black employees live on the station site, transportation to and from work is not required.

Since the white and black employees do not hold comparable positions at the station, it is not possible to make a comparison of salary differentials over the years.

The salary scale for positions held by black employees at the station is approximately as follows:

Unskilled employees, of which I should mention there are 56, the beginning salary is \$571 and the top salary is \$1,092.

Vehicle drivers and foremen, of which I believe there are two at the present time, the beginning salary is \$689 and the top salary is \$1,344.

Laboratory assistants, of which I believe there are now three, the beginning salary is \$865 and the top salary is \$1,428.

There are no comparable positions held by white employees. The bottom annual salary for white employees is approximately \$1,680. In addition to cash wages, the black employees, but not the white employees, are provided housing and fuel without charge.

We have not been able to get "poverty datum line" statistics for a rural area comparable to the NASA tracking station. We have been provided "poverty datum line" figures developed by South African sources for Soweto in Johannesburg, which range from \$1,276 (Asso-

ciation of Chambers of Commerce of South Africa) to \$1,680 (Johannesburg Chamber of Commerce) per annum for a family of five living in that urban area. The NASA station is in a rural area and black station employees are furnished rent-free housing and fuel in addition to the wages, as noted above. For this reason we are not able to relate meaningfully the CSIR wages paid at the NASA tracking station to the "poverty datum line" data available.

The next question, Mr. Chairman, is, Does the council have educational programs to assist the workers or to train them? Are Africans included?

We would like to know if Africans are in this program since we are in it and if so, how many have obtained their diplomas under it?

The answer is as follows: The CSIR has two training programs for the station technical staff. One is for electronic technicians at the technical college level, and one is for training to the bachelor of science engineering level at local universities. Formal training costs and salaries under the technician program are paid from CSIR funds. However, when these trainees actually work at the NASA station, gaining practical experience, their time is charged to NASA. The total cost of the engineering level training has been borne by the CSIR.

The minimum educational requirements for participation in either of the training programs is the equivalent of high school plus 1 year. No black employees have been included in these programs. We understand that there is no electrical engineering curriculum available in schools open to black South Africans.

The next question is as follows: Has NASA or the Council surveyed the educational situation in the area where African workers live and have they sought to be of assistance? Does the Council provide educational counseling to its workers or their children? Do they provide tutoring programs? Do they have an office or provide for any kind of assistance to African employees to go through the legal and administrative rigmarole and secure permission for their wives and families to live with them?

The answer is as follows: NASA has not conducted such a survey. Our involvement with educational programs at our various stations throughout the world has to date been limited to training programs for station technicians. Where the stations are operated by host country personnel, we have not otherwise dealt at any of our stations with the education of workers or their families.

We are informed that CSIR provides no formal education counseling to its employees or their children, but the station manager is prepared to give advice at any time when requested.

At the NASA station there is no requirement for black employees to obtain permission for their wives and families to live with them. Of these employees, 45 are married and they reside with their families on the station site.

The next question reads as follows: How many Americans who are NASA employees have gone to the station since the beginning? How many went in 1970? Do you have any going back and forth to the station regularly or on temporary assignments? Are any of these temporary or regular types that may be going back and forth black?

The answer is this: The number of visits made to the station by NASA employees, including employees of the Jet Propulsion Labora-

tory, since the beginning of operations there is approximately as follows:

I should explain, Mr. Chairman, that the Jet Propulsion Laboratory operates with NASA under contract, so its employees are not civil service employees.

Mr. FULTON. Would you say with what university it is connected?

Mr. SHAPLEY. With the California Institute of Technology, which operates JPL. JPL itself is a Government-owned facility.

From 1957 to 1960 we had 24 visits and from 1961 to 1969 we had 243 visits. During 1970, 28 employees visited the station.

There has been only one permanently based U.S. engineer, assigned from the JPL for purely technical liaison purposes. All other visits were temporary in nature ranging from a few days to a few weeks. These were made by technical personnel primarily for such purposes as installing special equipment, correcting deficiencies in operating equipment, or instructing CSIR personnel in technical procedures.

Our best information is that none of the above personnel were black.

The next questions are these: We would like to know about the facilities for African employees at the stations. Also about the locker rooms. Are they segregated? Do they drink out of separate water fountains as they do in the rest of South Africa?

As we understand, their eating facilities are separate and all the rest. We would like to know how many hours a day that the average white worker works as compared to the African worker at this installation. Whether the restrooms are segregated; whether the facilities are interchangeable in their cleanliness, their convenience, their size, their number.

The answer is this: Facilities at the station are segregated. We are informed that the CSIR policy is to provide separate facilities for black and white employees equal in cleanliness, convenience, size, and number. The exception is the staff cafeteria, which is open only to the technical staff, all of whom are white employees. This facility is required by the technical staff since they are required to work abnormal hours for station operational reasons. Since all black employees reside on the station site and are not required to work abnormal hours, the CSIR considers a similar facility as unnecessary.

Mr. FULTON. And there is no busing?

Mr. SHAPLEY. I believe not, sir.

Mr. NIX. It would be better if you did.

Mr. SHAPLEY. I would say, Mr. Fulton, that the housing for the employees is quite close to the station, as I understand it.

Mr. FULTON. That is what I understand, and they eat at home.

Mr. SHAPLEY. The next question is as follows: And when Americans are detailed to work at the tracking station for a short or long period, is there a procedure in NASA for providing these percentages and background on South Africa, and its policies? Is there a procedure for issuing such persons a statement on U.S. Government policy toward Africa? Are such persons as well as the American in the American station there regularly advised about our policy communicating with certain elements in South Africa and the majority? Do these American employees have interracial contacts outside of chance ones?

The answer follows: The engineers who are detailed temporarily to the station for short periods of time are briefed by NASA solely on their technical assignments. These engineers are usually sent to the station to perform a specific task relating to the installation or repair of special equipment which in almost all cases involves long hours of work at the station site, leaving little or no time for social activities. Therefore, any interracial social contacts are chance ones.

The Jet Propulsion Laboratory engineer, who is assigned as the resident technical liaison representative, is also fully briefed by JPL and NASA on the nature of his technical assignment and duties. However, he is also given a verbal briefing by the Department of State on those matters which the Department feels are appropriate for an American who will be stationed in South Africa for an extended period of time.

The final question in this series, Mr. Chairman, is as follows: Is the director of the station a Nationalist, a United Party member or a Progressive? What is Mr. Goddard, the Deputy Director? Are they advised by NASA of U.S. position on race and on seeking peaceful change toward majority rule?

The answer follows: These officials are career South African civil servants. We are not aware of their political affiliations. We are confident that they are aware of U.S. attitudes on the matters referred to.

Mr. Chairman, that completes the material we prepared for the committee.

Mr. DIGGS. Thank you very much.

In response to the question about facilities at the NASA tracking station, the pages are not numbered.

Mr. SHAPLEY. Yes. I am sorry about that, Mr. Chairman.

Mr. DIGGS. Your answer was that facilities at the station are segregated. I want to make that emphatically known, that we have appearing before us an agency of the U.S. Government which has admitted in writing and publicly that the facilities at its installation in South Africa are segregated.

Now that your attention has been called to these employment practices, the segregated facilities, what does NASA plan on doing?

Mr. FULTON. Where is that point that you are speaking about?

Mr. SHAPLEY. On the 10th page of the attachment. I am sorry the pages are not numbered, sir.

Mr. FULTON. I am sorry to interrupt. What was your question?

Mr. DIGGS. I said now that they have admitted the facilities were segregated as well as the employment practices as they have described them. What do they plan on doing about them?

Mr. SHAPLEY. Mr. Chairman, we would plan within the framework of our contract and the pertinent agreements to approach the South African Government agency with which we deal to see to what extent conditions can be improved.

Mr. DIGGS. So you have now made a conscious policy decision—whatever words you want to use—to demand, request, or what have you, that the management of the tracking station throw over the local coloration and refuse to continue these practices. Is that correct? Is that what you are saying?

Mr. SHAPLEY. Not quite, Mr. Chairman. Because we are dealing with another government on matters which fall within the laws and prac-

tices of that government, we will approach them and see what improvements they are able to make within their own framework in South Africa.

Mr. DIGGS. When will this be formally instituted?

Mr. SHAPLEY. We will begin these discussions as soon as we can.

Mr. DIGGS. Who will have responsibility for that?

Mr. SHAPLEY. Well, we have not assigned a specific individual at this time, but we will, working with the Department of State, have an appropriate senior person in NASA discuss this matter with the South African authorities.

Mr. DIGGS. Can you give us an idea? Can you be more specific about what you expect to request of the government and of the agency?

Mr. SHAPLEY. Well, we will request them to make all the improvements in this direction that they—as I have said in my statement—can in conforming their practices to those which NASA and other U.S. Government agencies would like to see enforced.

I cannot say to you how far they will be prepared to go, and I would have to say, Mr. Chairman, that I would not expect that they would be able to do away with the fact of segregation of facilities within their existing statutes and policies.

Mr. DIGGS. This is an assumption you are making here. Are you saying the answer is going to be predictable, that they can't do anything about it?

Mr. SHAPLEY. No, sir. We will go as far as they will.

Mr. DIGGS. For example, on these facilities there is no law in South Africa that says that in a nonpublic situation—and that is what those dining facilities are—anybody can't walk in off the street, they are private dining facilities—there is no law that says that there can't be multiracial seating and eating. As a matter of fact, on the day we arrived there appeared a story in the local press where the question was raised about a whole series of what can be done within South African law, and one of the things that was pointed out was the fact that under these kinds of conditions there is no law.

In a public situation that is something else, but this is not a public restaurant. It is a private dining facility. There are four people in this room right now who were there who can support this statement.

Do you plan on relying upon some kind of report from these people or do you not consider it of sufficient import in view of the objective of this committee of getting public agencies to set the right kind of example, and in view of NASA's domestic policy do you not think that it is worthy of a top official, yourself, for example, going out there to witness these conditions for yourself and to familiarize yourself with all the nuances that exist in this installation?

Mr. SHAPLEY. Yes, sir, I do; and that is the type of action we have in mind.

Mr. DIGGS. You plan on going to South Africa yourself?

Mr. SHAPLEY. It may not be me. If it is not me, it will be another senior official of NASA.

Mr. DIGGS. It would be interesting to help understand some new nuances if you took a ranking black employee of NASA along with you. Do you have anybody that could accompany whoever you plan on sending? Because I think that would be important, that an interracial team go out there.

Mr. SHAPLEY. That is a possibility, sir, and we will certainly consider it.

Mr. DIGGS. I yield to the gentleman from Pennsylvania, Mr. Nix.

Mr. NIX. Mr. Chairman, I just listened to what you said a moment ago.

You are not saying that by going to South Africa, viewing the situation and familiarizing yourself with the conditions, even with a group of blacks, that such a visit would effect change. You don't believe that, do you?

Mr. SHAPLEY. I believe there is a possibility that the actions taken in consequence of the visit might effect some changes. My earlier answer, Mr. Nix, was to indicate that I doubt that any action that NASA can take will change the basic attitudes and policies of the South African Government.

Mr. NIX. Absolutely.

Mr. SHAPLEY. That was the import of my earlier statement to the chairman.

Mr. NIX. Even if you took a hundred blacks, a great number of higher officials in NASA, no change would be effected. It is obvious from the fact that we know, from the knowledge we have of the policies of that government, we have no way in which to influence changes in that sovereign government, not at this time.

Would you agree with that?

Mr. SHAPLEY. I would agree with that, sir, but I would indicate in consonance with the earlier discussion that I believe changes of some degree within the existing framework may be possible. These may not be fundamental changes, but these would be changes in the direction which has been discussed.

Mr. NIX. What specific changes have been made, let us say, in the last 2 years in the working conditions and the availability of advancement from the status that the blacks enjoy now to the higher positions?

Mr. SHAPLEY. To my knowledge, Mr. Nix, the basic framework of the situation has been the same for many years. The degree to which individuals may have advanced within this restrictive framework, I am not aware.

Mr. NIX. Of any.

Now, the real reason why we, the United States, countenance this sort of arrangement, and put up with these conditions, is that you really believe, at least the agency is of the opinion, that this is essential to our program. Is that correct?

Mr. SHAPLEY. Yes, sir. I would say, Mr. Nix, the location of a station at this point on the globe is essential.

Mr. NIX. You say that the station remains a necessary element of our national space program?

Mr. SHAPLEY. Yes.

Mr. NIX. That is the overriding consideration, and that is why the U.S. Government has put up with these conditions. That is true, isn't it?

Mr. SHAPLEY. I would say so, sir.

Mr. NIX. I wonder whether or not all alternatives have been examined to determine whether or not it is a necessary part of our program.

Mr. SHAPLEY. I believe they have, Mr. Chairman. This is a subject which has been studied frequently over the years, and we are con-

tinuously reviewing the total configuration of our tracking stations around the world with a view to making reductions and economies where we can, and we have over the past years closed several stations and otherwise adjusted the tracking network to meet the needs.

As I believe was testified at the earlier hearing, the South African location happens to be by geographical accident at what you might call the crossroads, where many of our launches, our satellites go. It is on the line of launch from Cape Kennedy and most of our satellites have to pass over that area, and this is an area at which they can be corrected and checked, and it is important to keep track of them.

Correspondingly, our satellites which are launched in polar orbit out of the Western Test Range in California go over the South Pole and are first picked up by the stations in this part of the world, in the Southern Hemisphere. From an operational standpoint this location is therefore especially important to these operations.

In addition, certain satellites that are launched toward the planets and several of the current programs are in this category, can only be tracked from the Southern Hemisphere for many of the first days of the flight until they get out far enough where they can be seen from both the Northern and the Southern Hemispheres. In monitoring these expensive missions—and it is very prudent from our standpoint to keep very close watch on the conditions on board the spacecraft—the South African station is particularly essential.

Mr. FULTON. Would you yield on that point?

Mr. NIX. Just 1 second. That is the point that I wanted to make. I want it clearly understood that the motivating reason for its presence, and why it is continued there is because the Government of the United States or the agency in charge here deems it absolutely necessary.

Now, of course, no study has been made to determine whether or not that could be eliminated without a destructive effect upon the NASA system. That has not been done.

Mr. SHAPLEY. Studies of that type, Mr. Nix, have been made at various points over the years, and the conclusions have been along the lines I have indicated.

Mr. NIX. This is a problem that Mr. Fulton ought to be able to solve. I yield to you.

Mr. FULTON. I was going to point out that on the Kennedy, the Cape Kennedy Test Range, the next stop beyond South Africa is Australia. So it is quite a hop away to the next station. Therefore, the safety and security of our U.S. astronauts demand a station at a halfway point, which is South Africa; is that not right?

Mr. SHAPLEY. That is correct, Mr. Chairman, except I should say that the station in South Africa does not support directly the manned flights. The trajectory on those is such that they can be monitored from Madrid on their way over in this direction, so it is primarily the unmanned satellites that are tracked from the South African station. This includes satellites like our orbiting astronomical laboratories, in which hundreds of millions of dollars are riding on each mission.

Mr. FULTON. We have been to Madrid and have seen those facilities, but there, too, we are in a country where there is not freedom and no civil rights.

With the permission of the gentleman from Pennsylvania, we did have another tracking satellite station in Africa at Zanzibar, which could have been an alternate station had conditions not required the closing of it; is that not correct?

Mr. SHAPLEY. It is correct that we had a station in Zanzibar. (The following material was supplied for the record.)

NASA formerly had a station in Zanzibar, however that station was devoted entirely to support of the manned space flights and did not have the capability of supporting the deep space probes and scientific satellites supported by the South African station. But more importantly, the Zanzibar location does not have the unique geographic relationship to Cape Kennedy that South Africa does. For this reason, the Zanzibar location would not serve as a satisfactory alternative.

Mr. FULTON. So that there was unrest and insurrection, and we had to get our equipment out in a hurry, as a matter of fact, to save the equipment.

Mr. NIX. Would the gentleman yield to me a moment?

Mr. FULTON. I would be glad to.

Mr. NIX. Conditions in that country have stabilized themselves now, so programs the gentleman offers is an escape. Why not put it back? They are not at war now. The economy has been stabilized, and there is tranquility in that country now. So perhaps that is the answer.

Mr. FULTON. Could I ask: How many black employees at this particular installation would be thrown out of work if we made a transfer and what would the cost be? I think the cost would be enormous at this point, when we are cutting down on the budget of the space agency.

Mr. SHAPLEY. Our estimates on the nominal cost, Mr. Fulton, of replacing the station at another location—if, in fact, there is a feasible location which can meet the geographical requirements—is about \$35 million at this time. The cost, of course, would depend in part on the location. That would include the move and the necessary new facilities.

On the first half of your question, as the statement has indicated, there are approximately 61 black employees at the South African station who make their livelihood from work at the station.

Mr. FULTON. We did use Zanzibar for our Mercury manned flights. So we did use a station along the lines that the gentleman from Pennsylvania is recommending for manned flights, didn't we?

Mr. SHAPLEY. I believe that is correct. The current manned space flight network has been thinned out, as you know. Is there a station in Africa for manned space flights now?

STATEMENT OF GERALD M. TRUSZYNSKI, ASSOCIATE ADMINISTRATOR FOR TRACKING AND DATA ACQUISITION, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

BIOGRAPHY

Gerald M. Truszynski is responsible for planning, development, and operation of global tracking networks, facilities, and systems for communications and data acquisition.

NASA's Office of Tracking and Data Acquisition is charged with support of spacecraft in the unmanned scientific exploration of space near the earth and

beyond to the sun and the planets; the manned flight programs such as Apollo and Skylab; commercial and foreign space projects; and support of scientific satellites of the Department of Defense. The Office also has agency-wide functional responsibility for automatic data processing activities.

Truszynski was appointed to his position in March 1968. He succeeded from the post of Deputy in the same Office, which he had held since its creation in 1961. He came to NASA Headquarters in 1960 from NASA's Flight Research Center, Edwards, Cal.

In his career at Headquarters, Truszynski has assisted in design and construction of the worldwide tracking systems for manned space flight programs, Mercury, Gemini, and Apollo; the planetary Deep Space Network; and the global NASA communications system, as well as modification and improvement of the STADAN Satellite Network.

The volume of traffic in the round-the-clock operation of the networks now totals more than 40 spacecraft returning 200 million data points to earth each day. The OTDA networks and stations employ some 4,000 U.S. and foreign citizens and represent a capital investment of about \$450 million.

Beginning his career upon graduation from Rutgers University in 1944, he joined the NACA, or National Advisory Committee for Aeronautics (NASA predecessor), at the Langley Aeronautical Laboratory, Hampton, Va., as an engineer in instrument research and development. Three years later he was transferred to the NACA station at Edwards, Cal., as instrument project engineer on the rocket-powered X-1, first airplane to breach the speed of sound.

In 1954 Truszynski became chief of the instrumentation division at Edwards. He headed development and operation of instrumentation, computer, and tracking systems for the national research airplane program under NACA—including a series of jet- and rocket-powered aircraft such as the X-1, X-2, D-558 and X-15, which pioneered supersonic and hypersonic flight. Truszynski directed the technical design and operation of the 500-mile "High Range" tracking network.

In 1969 Truszynski twice received NASA's highest award, the Distinguished Service Medal, for support of Apollo manned flights to lunar orbit and landing. He is a member of Tau Beta Pi and the Instrument Society of America.

He was born in Jersey City, N.J. He and his wife, the former Helen Bennett, of East Millstone, N.J., live with their two children in Chevy Chase, Md.

Mr. TRUSZYNSKI. No; there is not.

Mr. FULTON. No; there is not.

Mr. NIX. I understand that we can't measure democracy and equality in terms of money.

Mr. SHAPLEY. That is correct.

Mr. FULTON. I yield back. I will ask a question or two on my own if you are through.

Mr. DIGGS. Go right ahead.

Mr. FULTON. When we are looking for equal rights, how many women employees are at this station as against male employees? Because if we are going to have equal rights one way, we had better have it every way.

Mr. SHAPLEY. The information I have, Mr. Fulton, is that of the black employees, some of their wives are also employed at the station. Of the white employees, I don't have a breakdown of how many, if any, women are employed.

Mr. FULTON. Would you put into the record a statement on equal employment for women as well as for men? My suggestion is that you had better take a high-ranking NASA woman with you as well.

(The information requested follows:)

It is assumed that here again the CSIR follows the laws and practices of the South African Government with respect to this matter. From the information we have received, there are also white women employed at the station.

Mr. FULTON. Off the record.

(Discussion off the record.)

Mr. FULTON. Going a little bit further, we have Apollo 16 and Apollo 17 flights scheduled after the last flight, Apollo 15, in our lunar landings. Is that not correct?

Mr. SHAPLEY. Yes, sir.

Mr. FULTON. Apollo 17 will be the end of the series of Apollo flights, will it not? That is, as far as we know now on the budgeting?

Mr. SHAPLEY. Yes, sir.

Mr. FULTON. So there is a changing direction of NASA to a new type of launching. In this changing direction of NASA there is then no future use for manned space flight for this particular installation, is there?

Mr. SHAPLEY. You are referring to South Africa?

Mr. FULTON. Yes.

Mr. SHAPLEY. That is correct; however, and as I indicated before, even at the present time it is not used for manned space flight.

Mr. FULTON. So in future plans of NASA there are no future plans other than current use for the operation of the NASA station in South Africa, the tracking station?

Mr. SHAPLEY. No, sir. The station in South Africa is configured in two parts. One part is a part of the so-called deep space net, which monitors planetary probes, flights that go out to the planets, which require the large 85-foot antenna, which is the especially unique feature of the station in South Africa.

The other half of the station at South Africa is a part of our STADAN net, which operates with satellites in relatively low earth orbit and issues commands to satellites in that category.

Mr. FULTON. But there is no fundamental change in NASA's future policy which would increase the use of this tracking station in South Africa, is there?

Mr. SHAPLEY. There is none that would increase it, and none in sight that would tend to decrease it.

Mr. FULTON. The Jet Propulsion Laboratory is the operating agency for the unmanned space flights which are tracked by this station in large part, is that not right?

Mr. SHAPLEY. The Jet Propulsion Laboratory is responsible for the deep space net, the planetary missions tracking. The STADAN or scientific satellite network part of the South African station comes under the jurisdiction of the Goddard Space Flight Center, which is the headquarters for that network.

So, in effect, at South Africa there are stations that fit into two of our three tracking networks, which are colocated for economy reasons and for the reason that both of these networks require a station in the Southern Hemisphere approximately at the longitude of South Africa.

Mr. FULTON. But the scientists have been largely from JPL, haven't they?

Mr. SHAPLEY. I believe so largely. However, there have been those from Goddard.

Mr. FULTON. I agree, but a large part of them have been university people.

Mr. SHAPLEY. Yes, sir.

Mr. FULTON. From the California Institute of Technology.

Then, when the general statement is made that the facilities are segregated, that is a blanket statement that in part is not quite ac-

curate. In the first place, the facilities for housing on the base are made available to the blacks, but not to the whites.

Mr. SHAPLEY. Yes, sir.

Mr. FULTON. So the whites are excluded from the housing. They are not housed on the particular site, are they?

Mr. SHAPLEY. As I understand it, Mr. Fulton, there are two houses on the site which are occupied by CSIR white technical personnel of the station. Rent is charged for these houses, however. These are not provided rent-free to those employees.

Mr. FULTON. Of the 225 technical staff employees at the station, which you say are white, there are only two that are located, as far as housing is concerned, on the station, and then they are charged for their housing and the fuel; is that correct?

Mr. SHAPLEY. Yes, sir.

Mr. FULTON. For the black station employees they are furnished rent-free housing and fuel in addition to their wages; is that the case?

Mr. SHAPLEY. Yes, sir.

Mr. FULTON. Along the lines that have been suggested by the chairman and my friend, Mr. Nix, the members of the committee, why wouldn't it be possible for NASA to have black NASA employees or black JPL employees connected with this particular station so that it would move in the direction that both these gentlemen and the subcommittee have recommended?

Mr. SHAPLEY. I believe that it would be possible, Mr. Fulton, for such occasions to occur.

Mr. FULTON. Could we have some explanation for that kind of an approach?

(The information requested follows:)

As previously indicated, the station is completely staffed by CSIR and there is only one JPL technical representative there. There have been, however, numerous occasions on which NASA and JPL employees have had to temporarily visit the station for technical and operational reasons, and it has been also noted that from our best information none of these have been black. However, it is perfectly possible that in the future some of these personnel may be black, but this would entirely depend upon the need for a specifically qualified engineer for a specific task at the time required.

Mr. FULTON. I want to thank the chairman for inviting me to sit with you and his usual courtesy in affording me as a member of the Foreign Affairs Committee the ability to ask some questions from the point of view of the space agency.

I had thought, though, that a very quick answer would have been on the question of how fast you would move in the direction of desegregation, that you would have immediately answered, as the U.S. Supreme Court did in 1954 did with "We will proceed to ask for desegregation with all deliberate speed," and you would have been on safe ground.

Mr. NIX. Mr. Chairman, may I ask a couple of questions?

Mr. DIGGS. Is the gentleman through?

Mr. FULTON. I am through. That is said with some humor.

Mr. NIX. I am glad the gentleman added that. It would not have been acceptable to me.

Mr. FULTON. It isn't with me either.

Mr. NIX. The gentleman mentioned a few moments ago the housing facilities for blacks on this facility in South Africa. That is not, of

course, segregation. They are not segregated. There are two houses there for the whites, I understand. However, that is for the convenience of the NASA, is it not? Because if the blacks were not housed there, they would be accommodated in some compound or some location distant from the installation itself, and it would certainly adversely affect the operation of NASA.

So, I suggest to you that the furnishing of houses to blacks on this installation is, in fact, an accommodation to NASA. Would you say that is true?

MR. SHAPLEY. Mr. Nix, the pattern at the station was established in the early days and has persisted. My understanding is that the pattern was that selected and established by the South African agency with whom we deal, and was actually in existence prior to the establishment of NASA when the station was a part of the International Geophysical Year.

I have no direct comment I can make on the motivations of those who made the decision at the time, but I am sure it is a convenience for all concerned to have the black employees located close to the station.

MR. NIX. The very fact that the arrangement was made by the South African Government confirms what I have said a moment ago. It is consistent with the policy, long-standing policy, of the South African Government to segregate the blacks in areas distant from the community where NASA is.

Thank you, Mr. Chairman.

MR. DIGGS. The gentleman is absolutely correct. I don't feel it necessary to elaborate on that particular point. But the fact of the matter is that these facilities for blacks on the base are provided for that very reason, because if they weren't provided, the nearest compound where blacks can live is inconvenient to the efficiency of the operation of the installation, and you would have to take them back home every night and bring them in every morning. You would get into the busing problem that the gentleman from Pennsylvania, Mr. Fulton, was alluding to, I believe, a few moments ago.

MR. FULTON. Could I be heard on a point?

MR. DIGGS. And the reason that they do have limited housing for certain whites that are on the base, that involves people who are in an emergency kind of occupation. Other than that, the general run-of-the-mill white employees do not stay on the base, because they can stay anywhere they want to stay. They can go right outside the gate of the compound near a city. They don't have to stay up there.

These are the kinds of nuances that only being on the ground there can uncover, because you certainly cannot rely upon the kind of reports that have been obtained from the South African management team that is out there, because they are not even aware of what you are talking about.

When you raise a question about restroom facilities and whatnot, the response was, "Well, everybody knows where they are supposed to relieve themselves."

The fact that some of the blacks live near the installation and, therefore, do not go home every day for lunch is another situation that one would learn immediately upon being there. They don't go home for lunch, despite the fact that the housing compound isn't that far away.

When we were there, we were there at lunchtime, and the blacks were out in the yard, right out there next to the building where the white people were having lunch. They were out in the yard under the tree nibbling on sandwiches, despite the fact that some of them may have lived nearby.

Mr. FULTON. Before you leave that point, the International Geophysical Year was 1957. NASA was not established until October 1958 by statute. Is that not correct?

Mr. SHAPLEY. Yes, sir.

Mr. FULTON. Would you give us under whose auspices the International Geophysical Year was instituted?

Mr. SHAPLEY. The entire International Geophysical Year operation was under the cognizance of the National Academy of Sciences. On the Government side the support was provided by the National Science Foundation and several other agencies including the Naval Research Laboratory.

Mr. FULTON. And under the international auspices of the ICSU.

Mr. SHAPLEY. Yes, sir; the International Council of Scientific Unions.

Mr. FULTON. So it was an international project when it began.

Mr. SHAPLEY. Yes.

Mr. FULTON. The word "compound" has been used within the installation in which NASA is interested in South Africa. There is no such thing as restricting any individual within the compound or within the installation, is there, by either the South African Government or NASA? I think we should have that clearly in the record.

Is that or is that not the case?

Are there restrictions on certain people? I think the chairman has a good point there.

Mr. SHAPLEY. I believe that it is not a compound, as I understand it, in the sense that there are areas of the base at large to which one race or the other is restricted. It is my understanding that some of the buildings or parts of the buildings are, in fact, restricted to the use of one race or the other.

Mr. FULTON. Is that on the basis of the particular technical level or is that on the basis of color? Because we have dining rooms right here in Washington that are Government dining rooms that are restricted to certain management groups, where the rest of us can't get in, not even Congressmen.

Mr. SHAPLEY. I cannot speak in detail to the theory of each of the restrictions at the South African station.

Mr. FULTON. Are we participating in restrictions based on color alone? I think that should be answered for the record, and if we are, then I think we should move to change it.

Mr. SHAPLEY. We are supporting it only in the sense that we are providing the funds for the operation of a station for us by the South Africans, which they are operating in accordance with their customs, laws, and practices. Beyond that, I would believe it is a matter of interpretation as to whether we are supporting a situation that is legally required, or one that is required by practice or custom.

Mr. FULTON. As you said, I believe that negotiations should be instituted to see what can be worked out if we are dealing with the Government.

Thank you, Mr. Chairman.

Mr. DIGGS. I yield to counsel for questions. I might add that counsel was present during our visit to the tracking station along with two other people that are in the room, Mr. Melvin Benson from the House Foreign Affairs staff, and Mr. Jamie McClellan, who is with Congressman Vander Jagt's staff. You have four people in the room who were there on the spot and speak with the expertise of such observations in this connection. Mrs. Butcher?

Mrs. BUTCHER. You said that many of these practices may be governed by law or custom. Is it satisfactory to you as part of the Government to have the station governed by custom where the law does not require segregation?

Mr. SHAPLEY. I would say, Mrs. Butcher, that segregation is in no way satisfactory to the U.S. Government. I believe that we have to explore with the South Africans to see what they can and will do within the limits of their laws as they interpret them and their customs, and as they are willing to change them.

Mrs. BUTCHER. Should the South African Government indicate a disinclination to go beyond custom, what is the position of NASA?

Mr. SHAPLEY. I believe that there is a point beyond which we cannot go. Our position there, as you know, is as a nation which wants and needs an essential service that is provided by this tracking station. The limits to which the South African Government and the South African people directly involved will adjust their customs and practices to those that we prefer is a decision which really has to be made by them in the last analysis.

We can use as much suasion and persuasion as we can, but we cannot, in the last analysis, in my opinion, force them to make a change.

Mr. DIGGS. Would counsel yield at that point?

Would you exclude, Mr. Shapley, the cancellation of the contract with this agency? Would you exclude that?

Mr. SHAPLEY. That, of course, would be the ultimate sanction, and in a sense the only—

Mr. DIGGS. If they were not inclined to comply with these kinds of guidelines, would you exclude the cancellation of that contract as a result?

Mr. SHAPLEY. I would not exclude it from consideration, but I would have to say, Mr. Chairman, that decision would have to be weighed in the light of its total impact on the job that we have to do.

Mr. DIGGS. You would not exclude it. Would you recommend it? Would you be opposed to it in the final analysis if it came to that kind of decision, and you were asked to make a recommendation as to whether or not the contract ought to be canceled? What would be your answer to that?

Mr. SHAPLEY. I would have to be confronted, I believe, Mr. Chairman, with a real situation as to what the actions proposed or undertaken or refused by the South African Government would be. It would be very difficult, I believe, to answer that question fairly on a hypothetical basis.

Mr. DIGGS. To put it a different way, do you think that the South African Government faced with the prospects of a cancellation and in view of the benefits that they get out of this contract, do you think that they would deny you the execution of these kinds of guidelines?

Do you think they would say, "Well, you can't do it," and just deny you and tell you that it is going to be operated in this fashion whether you like it or not?

Do you think the South African Government would actually react in that fashion?

Mr. SHAPLEY. I don't know, sir, and I think that is what we have to find out in the discussions?

If I may comment, Mr. Chairman, the benefits from the existence of this station are almost entirely to the United States. The South African Government, as has been testified before, receives only reimbursement for the actual cost. There is no fee or profit involved, and there is really little direct benefit to South Africa from the operations that the station itself conducts.

The data from the satellites and the spacecraft and so on is not of direct interest to the South Africans, and I mention that to contrast this type of operation with some other U.S. operations overseas where the local nation is also a direct beneficiary.

Mr. DIGGS. Obviously they are getting technical skills developed; are they not?

Mr. SHAPLEY. To some extent.

Mr. DIGGS. Not to mention—you have already outlined the amount of compensation that inures.

Mr. SHAPLEY. They do receive the benefit of the employment of the roughly 300 people involved, and there is some technical benefit to them in the experience gained in operating the station.

Mr. DIGGS. I yield back to counsel.

Mrs. BUTCHER. The director of the tracking station was quoted in an article as saying that participation in the scientific research had brought national prestige and membership in the international organization to South Africa, and had brought various scientific, technical, and electronic skills to the South African Government.

What I wish to ask is that this be clarified. Is the tracking station a U.S. Government facility?

Mr. SHAPLEY. Well, that would be a matter of definition. The land is owned and provided by the South Africans. Under the terms of the agreements between NASA and CSIR, all equipment furnished in connection with the station remains the property of NASA, and may be removed or disposed of by NASA in the event of termination of the agreements, or as otherwise agreed upon with CSIR.

In the circumstances, I think one could define it either as a U.S. facility in the sense that it is a facility that is established by the United States serving U.S. interests.

As an entity on the ground there, I think you can equally fairly say it is a South African station configured to serve the U.S. mission.

Mrs. BUTCHER. To the extent it is a U.S. facility and to the extent we participate in it, aren't we bound by our constitutional proscriptions with regard to discrimination? Or with regard to equality of treatment?

Mr. SHAPLEY. I believe I would have to have legal advice to interpret the constitutional and other legal provisions. My understanding, Mrs. Butcher, is that the Constitution and the laws of Congress extend to protect U.S. citizens overseas, but they do not carry force with respect to operations of other nations within their borders.

Mrs. BUTCHER. I would appreciate it, Mr. Chairman—I think it would be useful to have an opinion by counsel as to the application of the Constitution to the operation of the U.S. Government in this respect.

At any rate, by virtue of the Executive order, NASA is obligated to comply with the fair employment practices of that order in the absence of a provision exempting it from that Executive order, and it was testified to on June 2 that the major contracts do not contain such a provision.

Mr. SHAPLEY. I believe, Mrs. Butcher, that there has been, or is in the record, an official exemption issued by the Secretary of Labor, as required under the Executive orders establishing our government's employment opportunity policy, which exempts contracts where the work is to be performed outside the United States, and no recruitment of personnel within the United States is involved, and that this exemption is applicable to these contracts.

Mrs. BUTCHER. If I understand it, this exemption applies to contracts where there is a provision in the contract that the work is to be performed outside the United States, or there is to be no recruitment in the United States, and that this provision is not in either of your major contracts.

Mr. SHAPLEY. The contracts in question are contracts between NASA and the CSIR, which is a South African agency, and they relate exclusively to the operation of the station, which is outside the limits of the United States.

Mrs. BUTCHER. May we have an opinion from your counsel on whether your contracts are consonant with the Executive order?

Mr. SHAPLEY. Yes; I am confident that they are entirely consonant with that Executive order.

(The information requested follows:)

Question. May we have an opinion from your counsel on whether your contracts are consonant with the Executive Order?

Response. The General Counsel of NASA has submitted the following opinion with respect to the foregoing question:

"The contracts between NASA and CSIR, covering the operation of two tracking stations in South Africa, are considered to be fully consonant with the Executive Orders establishing the U.S. Government's policy on equal employment opportunity.

"The Government's policy in this regard is currently set forth in Executive Order 11246, dated September 27, 1965, as amended by Executive Order 11375, dated October 27, 1967. Part II of Executive Order 11246 pertains specifically to nondiscrimination in employment by U.S. Government contractors and subcontractors, on the basis of race, color, religion, sex or national origin. Sec. 202 of Part II reads in part as follows:

"Sec. 202. *Except in contracts exempted in accordance with Sec. 204 of this Order*, all Government agencies shall include in every Government contract hereafter entered into the following provisions: (*italics supplied*)'

"Detailed contractual provisions are then prescribed under which the contractor agrees not to discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin; the provisions also set forth procedures which the contractor is to follow in complying with the policy of nondiscrimination, and provides for a penalty if he fails to do so.

"As indicated by the underscored portion of Section 202 (quoted above), the contractual provisions prescribed by that Section are not required to be included in contracts exempted in accordance with Section 204 of Executive Order 11246. Sec. 204 reads in part as follows:

"... The Secretary of Labor may, by rule or regulation, also exempt certain classes of contracts . . . (1) whenever work is to be or has been

performed outside the United States and no recruitment of workers within the United States is involved.'

"Acting pursuant to the authority in Sec. 204, the Secretary of Labor issued regulations which exempted certain type of contracts from the requirements of Sec. 202 of the Executive Order. (Title 41, Code of Federal Regulations, Part 60-1.5). Part 60-1.5(a) (3) of these regulations reads as follows:

"60-1.5 Exemptions

"(a) General—

"(3) Work outside the United States. Contracts and subcontracts are exempt from the requirements of the equal opportunity clause with regard to work performed outside the United States by employees who were not recruited within the United States.'

"(Although the regulations of the Secretary of Labor referred to above were not issued until May 28, 1968, the Secretary had previously, on May 27, 1965, issued an interim regulation, adopting the regulations which had previously been issued by the President's Committee on Equal Employment Opportunity under Executive Order 10925, which was the predecessor of Executive Order 11246. The regulations issued by the President's Committee had similarly exempted from the requirements of the Equal Opportunity clause, contracts and subcontracts under which work would be performed outside the United States and where no recruitment of workers within the United States was involved. The exemption for such contracts has therefore been continuously in effect since shortly after the issuance of Executive Order 11925, on March 6, 1961).

"Since the two contracts between NASA and CSIR cover work to be performed wholly outside the United States and no recruitment of workers within the United States is involved, NASA considers that the contracts have come within the exemption issued by the President's Committee on Equal Employment Opportunity under Executive Order 10925 and the corresponding exemption issued by the Secretary of Labor under Executive Order 11246.

"In this connection, NASA issued additional procurement regulations implementing the two Executive Orders referred to above, and the respective regulations issued thereunder. Part 12.803(a) of the current NASA regulations provides as follows:

"12.803 Applicability and Exemptions.

"(a) Subject to the rules, regulations, and relevant orders of the Secretary of Labor, or such further rules, regulations, and relevant orders as he may hereafter issue, the Equal Opportunity clause will not be included in the following:

"(iii) contracts and subcontracts under which work is to be performed outside the United States and where no recruitment of workers within the United States is involved . . .'

"Omission of the Equal Opportunity clause from the two contracts between NASA and CSIR is therefore fully in consonance with Executive Order 11246, the regulations of the Secretary of Labor issued thereunder, and NASA's procurement regulations."

Mrs. BUTCHER. When we were at the station it was also observed that there was no understanding of the application of the job reservation laws as well as the laws related to facilities as applicable to the station. An understanding of the laws relating to salaries and documentation was requested on those.

I am just reiterating that request.

Mr. SHAPLEY. This was a request that the committee made to the station?

Mrs. BUTCHER. That is correct. There was also a request that the questionnaire be submitted. In fact, the management, the South African management, said they had a copy of the questionnaire, and that they would submit it in completed form, insofar as it was applicable. (See appendix, p. 334.)

In addition, documentation was requested on the educational assistance which you are giving, and I notice here you are not giving any, but perhaps you have plans for some. So documentation on that would be appreciated.

MR. SHAPLEY. NASA plans to propose this general area as an item for exploration with CSIR.

Mrs. BUTCHER. That is all I have, Mr. Chairman.

MR. DIGGS. I think it is important to stress this. We have been talking about the employment differentials and facilities here. I don't want to give the impression that our inquiry is limited to that, because when you get into the training program, and NASA is participating in the financing of certain training programs within that installation, when you get into that, you discover that there is an exclusion based on race, not based on sex or any other fact, but based on race.

NASA is part of that. When you talk about the fringe benefits and the many other things that could be contributory to the welfare of the black workers who for one reason or another may not have had all the advantages—there is just a whole range of things in which—counseling and all the rest—in which NASA could give some understanding, because 80 percent of the kids that are in the African families do not go beyond the fourth grade. They don't have any reading room or library facility for the children of the employees, books, reading facilities, a room to provide light, because these houses that you are talking about, these African—this African compound, you are talking about, has houses without any electricity or plumbing.

They are little pillboxes. You could set a whole dozen of them right in this room, and you will discover that.

So there are all sorts of things. Assuming that the employees on that installation do not have the background and what-not to qualify them for certain kinds of technical skills, you have got people there that ought to be the beneficiaries, since they are providing much of the sweat in connection with this installation.

There are all sorts of things of that nature that, in my view, the agency ought to be interested in pursuing on a humanitarian basis, not to mention training programs. You have three people that are listed down here according to your own statistics as assistant laboratory technicians.

I wonder, you know, because that is one of the cute things they do in that country, these so-called assistant laboratory or assistant this, or assistant that, are actually doing the work and they are just not getting paid for it. There might be one of these three people who may have sufficient training on the job now to take advantage of some kind of technical training and what-not, but that South African manager down there and his team are not going to do anything about it.

So when we talk about this whole situation, it is against a background that in our view demands that NASA reappraise its whole role in this situation, and its relation to the apartheid policy of the government and its complicity with it. I did not detect a clear response to the inquiry from Mr. Nix as to the feasibility of continuing that installation there in the first place. You said studies have been conducted.

When was the last study conducted that would create a problem if that installation was eliminated, if it came to that?

So these humanitarian considerations and all these considerations are very important, and certainly in terms of setting the kind of example that I believe is necessary. It is very difficult. I would think it would be a little difficult to tell General Motors and Ford up in Port Elizabeth about their segregation when you can go out to the NASA

tracking station and see the same thing, or when you can go to our own Embassy in Pretoria and do not find a black face because of the exclusionary policy on the part of our own Government right there in Pretoria right in our own embassy.

These are the kinds of things that make it difficult for people to understand. I happen to be serving in the General Assembly this year, in the United Nations, along with Admiral Sheppard, I might add, and I expect to have some conversations about the first man to utilize these kinds of facilities. I think he will be interested to know, because I have had some conversations with him.

Admiral Sheppard, I am sure, will be interested to know that this kind of facility exists. I don't think he knows, and I will be interested in his reactions to it.

One-fourth of all the issues coming before the United Nations in 1970, and the gentleman from Pennsylvania served as a delegate in the past, and he knows that one-fourth of all the United Nations Assembly are African issues. Out of the 130 nations who are members of the U.N., 40 of them, excluding South Africa, are members of that body. If you don't think this has any significance, if the NASA agency believes that the guiding principle involved in our installation there has something to do with the security interests or the space interests of the United States without any consideration for these other things and the implications that they represent for U.S. foreign policy, then I think somebody needs to go back to school.

I think you may find that.

Mr. FULTON. Mr. Chairman?

Mr. DIGGS. Yes.

Mr. FULTON. There is a point on the division of the types of equipment and services that is located in South Africa. Of course, the big dish could not be on a ship, but could other installations in accordance with Mr. Nix's suggestion, be, for example, placed on ships? We have several ships of NASA that are for tracking and telemetry purposes?

Could that be provided so that there is a division of functions, so that some functions could be placed in alternative locations, for example, on ships, as Mr. Nix has suggested?

If the installation cannot be moved in whole, can the functions in part be substituted at other locations?

Mr. SHAPLEY. I believe that only some aspects of what I refer to as the STADAN stations could be amenable to shipborne operations. The key facility at our South African station involves the precision tracking and data receiving capability for planetary missions associated with the 85-foot dish, and as you state, this would be impossible to make, on any sort of a reasonable basis, a shipborne operation and still perform its mission.

Mr. FULTON. How long would it take to make a new installation of a 85-foot dish, because the tolerances, I understand, must be tremendously close? That is, wind resistance and the tolerances of various types.

Mr. SHAPLEY. Even if another suitable site were feasible, in excess of 3 years would be required to design and build a replacement for the 85-foot dish capability.

Mr. FULTON. Then it would have to have personnel put in it and trained for that specific purpose, which would be new personnel; is that correct?

Mr. SHAPLEY. That is correct.

Mr. FULTON. That is all, Mr. Chairman.

Mr. NIX. May I, Mr. Chairman?

Mr. DIGGS. Go ahead.

Mr. NIX. I just want to make this observation, Mr. Shapley, when the question is raised, the answer is going to be this: We are committed to justice, we are committed to equality, but the benefits accruing to the United States of America from this installation transcends the considerations that you have mentioned.

That is what you are going to be told. If that is acceptable, then we in the United States of America, and people all over the world, wouldn't have very much hope. That is going to be the answer.

Thank you, Mr. Chairman.

Mr. FULTON. Mr. Chairman, should we then reconsider the location of so many space installations, for example, in the State of Alabama, where they refuse to give these rights and equalities? Should we then start, for example, on the Redstone Arsenal at Huntsville? Should we close it?

Mr. NIX. If the gentleman would yield to me a moment, I would say "No." I would say "No" because the conditions are not comparable. It is the denying the progress that is being made in the United States of America and the changing attitudes in this country to even suppose that we would have to consider closing them.

Mr. FULTON. They have a Governor down there that I think has not reformed very much.

Mr. NIX. His term is limited.

Mr. DIGGS. We at least have laws in this country to operate against that, and I think it is important, because the gentleman from Pennsylvania has made this analogy on two or three occasions, and I find the gentleman to be very fair in his evaluations, and it is just difficult for me to understand this kind of analogy, where you compare the uniqueness of South Africa with the State of Alabama, or the dictatorship in Spain, or with what was a disturbing situation on the island of Zanzibar, which is now part of Tanzania.

There just isn't any comparison. One has to recognize that fundamental point, and that is the uniqueness of the South African situation. Then a lot of these things that I am sure disturb the gentleman would fall into place.

Mr. FULTON. Of course, my position is that I have always been for civil rights, and if it is good one place, let's have it good every place. Let's just extend it and say that unless these people do grant these rights of equality and equal treatment, equal opportunity, then no matter where it is, we will take the same action.

I, too, agree with the chairman that South Africa is an outstanding example, but I know other places where there has been a denial of these rights, and if we are doing it abroad, let's look in the mirror and see ourselves at home, too, and don't place these installations where they don't conform to what the Constitution and our civil rights statutes say.

Mr. DIGGS. The subcommittee stands adjourned.

(Whereupon, at 4:45 p.m., the subcommittee adjourned, to reconvene at the call of the Chair.)

U.S. BUSINESS INVOLVEMENT IN SOUTHERN AFRICA

FRIDAY, NOVEMBER 12, 1971

HOUSE OF REPRESENTATIVES,
COMMITTEE ON FOREIGN AFFAIRS,
SUBCOMMITTEE ON AFRICA,
Washington, D.C.

The subcommittee met at 10:05 a.m. in room 2200, Rayburn House Office Building, Hon. Charles C. Diggs, Jr. (chairman of the subcommittee) presiding.

Mr. DIGGS. The subcommittee will come to order.

This morning, we are continuing the hearings of the Subcommittee on Africa in which the subcommittee seeks to bring to the public information on the facts on U.S. private involvement in minority-ruled countries of southern Africa; that is, on the extent, the nature, the policies, the practices, and on the philosophy of these businesses, as well as the facts on U.S. public involvement in these countries of southern Africa.

We have had representatives from the Export-Import Bank, the Department of Commerce, the National Aeronautics and Space Administration, the Post Office, and from the Overseas Private Investment Corporation.

We will have appearing before the subcommittee witnesses from the Department of Labor, the Equal Employment Opportunity Commission, the Treasury Department, Department of State, and perhaps the Smithsonian.

In addition to getting the facts on Government involvement in southern Africa and thus documenting our implementation of these pronouncements of abhorrence of apartheid that we have made at the U.N. and other international forums, a basic purpose of this inquiry into, and exposure of, U.S. governmental relationships with the minority-ruled and colonialist regimes of South Africa, is to cause a fundamental review and revamping of U.S. policies in these areas.

Without regard to the hypocrisy demonstrated by the gulf between U.S. words and deeds in this area, the relevance to U.S. business involvement in southern Africa is overriding. For, any efforts that may be made to induce private business to draw the line on future investment or expansion in southern Africa in the minority countries, to disengage, to adhere to fair employment practices, to avoid becoming involved with the South African Government or the Portuguese Government in these areas, are rendered futile, if the U.S. Government in its relationships in southern Africa is itself deeply engaged with these countries, if it does not assign or employ blacks in the Embassy or in its enterprises such as NASA, or if in its involvement

in southern Africa, the U.S. Government is buttressing and helping to insure the inviolability of apartheid.

We have asked the Atomic Energy Commission to appear before the subcommittee this morning because our involvement in the sensitive area of nuclear development is of critical importance, and the facts should be known to the American public.

Only a fortnight ago, the South African Minister of Mines reportedly announced that South Africa would enter the nuclear power field before the end of the 1970's.

This morning, in addition to Mr. John J. Flaherty, the Assistant General Manager for International Activities of the Atomic Energy Commission, we will also call upon a private witness, a British citizen, Miss Barbara Rogers, who is director of the British group, Friends of Namibia. She will discuss primarily business involvement in Namibia.

Mr. Flaherty is a native of Charlotte, Mich., a graduate of the University of Michigan—4 years before I arrived there, I note. He worked on the editorial staff of newspapers in Battle Creek and Jackson, Mich., until shortly before World War II.

He assumed his present position on June 27 of this year. He is responsible for administering the Commission's international cooperation programs, and for negotiations and liaison with foreign governments.

Prior to his appointment to his present position, he was the USAEC's assistant general manager for plans, and in this position he directed and coordinated AEC activities involved in program planning, analysis, and evaluation and reporting, including the development of policy for the conduct of AEC's uranium enrichment activities.

He has received the outstanding service award for his work with AEC.

Without objection, the total biographic statement for the witness will be entered into the record.

Mr. Diggs. You have a statement, Mr. Flaherty, and you may proceed.

STATEMENT OF JOHN J. FLAHERTY, ASSISTANT GENERAL MANAGER FOR INTERNATIONAL ACTIVITIES, U.S. ATOMIC ENERGY COMMISSION

BIOGRAPHY

John J. Flaherty, the Atomic Energy Commission's Assistant General Manager for International Activities is a native of Charlotte, Michigan. He graduated from the University of Michigan in 1936, then worked on the editorial staff of newspapers in Battle Creek and Jackson, Michigan, until shortly before World War II.

In his present position, which he assumed on June 27, 1971, Mr. Flaherty is responsible for administering the Commission's international cooperation program and for negotiations and liaison with foreign governments.

Prior to his appointment to his present position, Mr. Flaherty was the USAEC's Assistant General Manager for Plans. In this position he directed and coordinated AEC activities involved in program planning, analysis, evaluation and reporting, including development of policy for the conduct of AEC's uranium enrichment activities.

Mr. Flaherty entered Government service in 1941 with the War Department and in 1944 he was commissioned in the Navy. He was assigned to the Man-

hattan District at Oak Ridge as Deputy Chief of Personnel. In 1947, he transferred to the AEC in Washington and a year later was assigned to the Commission's Chicago Operations Office. He became Assistant Manager for the Chicago Office and then Manager of the AEC's San Francisco Operations Office. He returned in 1954 to the Chicago Office as Manager.

In 1957, Mr. Flaherty joined the North American Rockwell staff as Assistant to the General Manager of the Atomics International Division. He later became Vice-President for Planning and in 1961 was selected as the Division's Executive Vice-President. In 1966 he became President of the Division.

For his service in the Navy, he was awarded the Legion of Merit and the Navy Secretary Commendation. For his work with the AEC he received its Outstanding Service Award.

Mr. FLAHERTY. Thank you, Mr. Chairman. The U.S. Atomic Energy Commission's relations with South Africa can be summed up rather briefly. We currently have a bilateral agreement for cooperation in the peaceful uses of atomic energy with South Africa, which entered into force in 1957 and extends until 1977.

This is one of the 31 peaceful uses agreements we have with countries throughout the world. Under this agreement, we are permitted to sell or lease to the Government of South Africa special nuclear material for use in research and power reactors, as well as for other peaceful research purposes, and material has been provided to fuel a research reactor and a critical assembly at the South African Pelindaba Research Center.

Equipment for use in peaceful atomic energy research projects may also be exported pursuant to this agreement.

Material or equipment transferred to South Africa under this agreement is subject to international safeguards administered by the International Atomic Energy Agency under the terms of a trilateral agreement among the United States, South Africa, and the International Atomic Energy Agency.

Under the AEC's programs, we may arrange for unclassified visits and assignments of scientists to USAEC facilities. During fiscal year 1971, arrangements were made for three brief visits by scientists from South Africa. At present, there are also five South African scientists participating in unclassified projects at AEC facilities.

The AEC sponsored a research project to detect and measure high energy neutrinos produced in the earth's atmosphere by the action of primary cosmic rays. This project was undertaken by the University of California in cooperation with the University of Witwatersrand and is in the process of being terminated.

The primary object of the experiment was to detect the cosmic ray neutrinos and to measure some of their interaction properties. An extremely deep mine was required for this experiment, and, accordingly, instruments were set up in a gold mine of the East Rand Proprietary Mine Co., which were manned by University of California scientists. This equipment will shortly be disassembled and selected components returned to the United States.

Libraries in 61 countries, including South Africa, were formerly supplied with AEC reports free of charge. Beginning in the fall of 1969, the AEC started charging for such reports, and South Africa has subscribed to this continuing service.

South Africa is a major world supplier of natural uranium. Until 1966, the United States relied on South Africa to meet an important segment of the uranium needs of our nuclear weapons program.

South Africa presently has at its Pelindaba Research Center, located 20 miles west of Pretoria, a 20-megawatt thermal pool-type light water reactor which it purchased from the Allis Chalmers Corp.

With respect to the production of nuclear power, the South African Atomic Energy Board has announced that bids will be requested in 1972 for a 600-MWE reactor for the South African Electricity Supply Commission. The scheduled completion date for the plant, to be located near Cape Town, is 1978.

South African officials have held preliminary discussions with us about the supply of uranium enriching services for their proposed power reactor. If it is agreed to proceed with this matter, it will be necessary to increase the amount of enrichment services which can be supplied under the present agreement for cooperation.

Mr. Chairman, that concludes my written statement, and I will be very pleased to attempt to answer any questions which the committee may have.

Mr. DIGGS. Thank you very much. Are there any agreements concerning the Atomic Energy Commission involving the United States and South Africa that are not public documents?

Mr. FLAHERTY. No, sir. We have only the agreements that I mentioned in my statement. These are public documents, and I believe we have furnished copies of all documents to the committee.

Mr. DIGGS. Does the reference to these contracts in your statement constitute all of the contracts that you have with South Africa?

Mr. FLAHERTY. All of the contracts that the Atomic Energy Commission have with South Africa, I believe, have been covered in the statement; yes, sir.

Mr. DIGGS. What contracts do we have with South Africa under bilateral agreements?

Mr. FLAHERTY. There are, I believe, no contracts under the bilateral agreement. We have no contracts.

Mr. DIGGS. With what other African countries might we have bilateral agreements for cooperation in the peaceful use of atomic energy?

Mr. FLAHERTY. We have no other. This is the only one we have.

Mr. DIGGS. This is the only one on the whole African continent?

Mr. FLAHERTY. That is correct.

Mr. DIGGS. How many kilograms of uranium have we supplied South Africa, for example, for the research reactor?

Mr. FLAHERTY. I could read a list of the materials. We have supplied under lease to South Africa a total of approximately 44 kilograms of uranium-235. These have been under a lease to them. The charges, as of the end of June 30, 1971, were approximately \$200,000.

We have sold them 4.2 kilograms of uranium-235 for approximately \$50,000. This represents material which actually has been consumed in the process of operating the reactor, and this has in effect been a sale.

That is the total of uranium furnished.

Mr. DIGGS. Could you be more specific about how this uranium supply is allocated, for example, for the research reactor, for the Pelindaba Center?

Mr. FLAHERTY. Yes. The bulk of this material, except for gram quantities, has been furnished for use in the research reactor which I

mentioned, and in a critical assembly which is, in effect, a reactor with which one can experiment.

It permits you to study the neutronics of the nuclear process in reactor design.

Mr. DIGGS. You mentioned a lease agreement in this connection.

Mr. FLAHERTY. Yes, sir.

Mr. DIGGS. How about deferred payment sales. Is there any special nuclear material you may have sold them on that basis?

Mr. FLAHERTY. No, sir. This is the complete list of enriched uranium which we have leased or sold to South Africa.

Additionally, we have leased them 12,000 pounds of heavy water for use in their critical assembly, for \$123,000, and we sold them 544 pounds of heavy water for about \$25,000.

Mr. DIGGS. How about equipment?

Mr. FLAHERTY. The agreements permit us to supply equipment to South Africa, but I am not aware of any equipment supplied by the Atomic Energy Commission to South Africa.

Now, there could have been materials supplied by private industry, but we have no records of such transaction.

Mr. DIGGS. You have no record of any exports to South Africa with respect to equipment in this field?

Mr. FLAHERTY. No, sir. Only the equipment which I mentioned for the neutrino project which was used in a mine for the cosmic ray experiments. This equipment was supplied by the University of California; it was taken to South Africa, set up in the mine, and it is now in the process of being disassembled and being shipped back to the United States.

There probably will be residual pieces which are not worth moving which will be abandoned in place in the mine.

Mr. DIGGS. Isn't there some kind of export licensing process? With other agencies, or your agency?

Mr. FLAHERTY. The Department of Commerce issues the licenses, but where they involve controlled materials, they must come through my office. I mentioned in my statement the only export of equipment of which I am aware and that was the 20-megawatt reactor, sold by Allis Chalmers Co. That was sold under the terms of the agreement and export licenses were issued.

Mr. DIGGS. As a matter of fact, would you not know any exportation of equipment dealing with this kind of material?

Mr. FLAHERTY. If it were equipment specifically identified as nuclear equipment, it would come to the Atomic Energy Commission, for export licensing.

Mr. DIGGS. But there is some equipment that might be exported under someone else's jurisdiction?

Mr. FLAHERTY. Sir, pumps, valves, and these types of things, could be exported to South Africa for use in atomic energy work and we would never see it.

Mr. DIGGS. In other words, there is a lot of equipment that has applicability—

Mr. FLAHERTY. A large majority of equipment is not specialized. It is used in nuclear energy, but it is like any other equipment.

Mr. DIGGS. It has a convertible use, something like some of the planes that we have been selling them over there that they claim have no convertible use, that they are just little transport planes.

Mr. FLAHERTY. I am not aware of these aircraft transactions but in a nuclear facility, a very small overall amount of material or equipment is specialized and would come under our licensing review.

Mr. DIGGS. Since we have no other agreement with any other African country, might we assume that no material, no equipment, is being transferred to other African countries?

Mr. FLAHERTY. Not from U.S. sources, to the best of my knowledge. However, there are many other countries which have capabilities approaching ours. The International Atomic Energy Agency serves as one group through which materials and equipment can be transferred, and it is quite possible that they have furnished materials to other African nations.

We, of course, are members of the International Atomic Energy Agency, and we could certainly develop for you information along this line if you desire.

Mr. DIGGS. Without objection, you will provide that for the record. It would be appreciated.

(The information referred to follows:)

IAEA TECHNICAL ASSISTANCE (EQUIPMENT AND EXPERTS) PROVIDED TO AFRICAN COUNTRIES 1959-71

Country and project	Equipment	Expert
1972 (Proposed)		
Cameroon: Raw materials prospection.....	\$3, 000	\$27, 000
Democratic Republic of Congo:		
Radiobiology.....		20, 250
Radiochemistry.....	17, 000	13, 500
UAR:		
Nuclear engineering.....	20, 000	13, 500
Raw materials prospection.....	18, 000	6, 750
Ghana: Radioisotope laboratory.....	24, 000	9, 000
Kenya: Isotopes in animal science.....	10, 000	
Liberia: Radiochemistry.....	15, 000	
Libyan Arab Republic: Raw materials prospection.....	8, 000	
Morocco: Raw materials prospection.....	3, 000	27, 000
Nigeria: Isotopes in agriculture.....	2, 000	27, 000
Senegal: Isotopes in agriculture.....	24, 000	4, 500
Sudan: Isotopes in agriculture.....	15, 000	27, 000
Tunisia: Nuclear techniques in sedimentology.....	6, 000	4, 500
Uganda: Isotopes in animal science.....	3, 600	
Zambia: Isotopes in medicine.....	10, 000	27, 000
1971		
Algeria: Isotopes in fish culture.....		4, 000
Cameroon: Isotopes in agriculture.....	2, 500	24, 000
Ethiopia: Radioparasitology ¹	23, 000	
Ghana: Nuclear instrumentation ¹	30, 000	6, 000
Liberia:		
Radioisotope laboratory ¹	6, 000	24, 000
Health physics ¹	5, 000	12, 000
Mali: Isotopes in animal science.....	12, 000	24, 000
Morocco:		
Nuclear physics.....	20, 000	
Isotopes in soil science.....	10, 000	
Nuclear electronics.....		24, 000
Nigeria:		
Raw materials prospection ¹	6, 000	6, 000
Radiation protection.....	12, 000	6, 000
Senegal: Isotopes in medicine.....	13, 000	
Sierra Leone: Isotopes in medicine.....	10, 000	12, 000
Sudan: Isotopes in medicine.....	7, 000	24, 000
Uganda: Isotopes in animal science.....	10, 000	24, 000
UAR:		
Isotopes in agriculture.....	2, 000	
Raw materials prospection.....	4, 000	12, 000
Radiation chemistry.....	7, 500	12, 000
Zambia: Radiation protection.....	7, 500	24, 000

See footnotes at end of table.

IAEA TECHNICAL ASSISTANCE (EQUIPMENT AND EXPERTS) PROVIDED TO AFRICAN COUNTRIES 1959-71—Continued

Country and project	Equipment	Expert
1970		
Cameroon: Raw materials analysis	4,000	6,000
Congo: Isotopes in agriculture ¹	5,000	24,000
Ghana: Control radioisotope laboratory	18,000	-----
Kenya: Isotopes in entomology ¹	15,000	6,000
Libyan Arab Republic: Raw materials prospection	-----	2,000
Morocco:		
Isotopes in agriculture	16,000	12,000
Isotopes in soil science	-----	12,000
Nigeria: Isotopes in agriculture	15,000	24,000
Sierra Leone: Atomic energy planning	-----	4,000
Tunisia: Nuclear physics	-----	24,000
Uganda:		
Radiation protection ¹	6,000	12,000
Isotopes in agriculture	8,000	12,000
UAR:		
Raw materials analysis	4,000	6,000
Nuclear engineering	10,000	-----
Nuclear instrumentation	2,000	12,000
Zambia: Radiation protection	11,400	12,000
1969		
Congo: Radioisotope production	5,000	22,000
Ethiopia: Raw materials development ¹	5,000	-----
Ghana: Central radioisotope laboratory	16,000	22,000
Nigeria: Food irradiation	18,000	-----
Senegal: Isotopes in agriculture	4,000	3,600
Sudan: Isotopes in agriculture	-----	11,000
Tunisia:		
Raw materials analysis	2,000	11,000
Neutron spectroscopy ¹	5,000	-----
UAR: Neutron dosimetry	15,000	11,000
Zambia: Central radioisotope laboratory	15,000	-----
1968		
Congo:		
Nuclear electronics ¹	5,000	11,000
Radiochemistry	5,000	11,000
Ghana:		
Isotopes in entomology	7,000	22,000
Isotopes in medicine	-----	11,000
Kenya: Atomic energy planning	-----	3,600
Morocco:		
Raw materials prospection	-----	22,000
Isotopes in medicine	7,500	3,600
Sudan:		
Hospital physics	-----	22,000
Isotopes in agriculture	5,000	11,000
Tunisia:		
Neutron physics	16,000	5,500
Health physics	5,000	11,000
UAR: Isotopes in agriculture	8,000	11,000
1967		
Congo:		
Nuclear electronics	-----	11,000
Radiobiology	-----	11,000
Radiochemistry	-----	11,000
Kenya: Isotopes in agriculture	6,000	3,600
Morocco: Isotopes in agriculture	14,000	22,000
Nigeria:		
Use of irradiation in agriculture	14,000	-----
Isotopes in agriculture	5,000	11,000
Isotopes in hydrology	-----	11,000
Senegal:		
Isotopes in medicine	-----	22,000
Isotopes in agriculture	6,000	-----
Isotopes in animal sciences	-----	11,000
Tunisia: Raw materials prospection	8,000	16,500
Uganda: Isotopes in medicine	15,000	22,000
UAR:		
Reactor engineering	9,500	7,200
Nuclear engineering	10,000	11,000

See footnotes at end of table.

IAEA TECHNICAL ASSISTANCE (EQUIPMENT AND EXPERTS) PROVIDED TO AFRICAN COUNTRIES 1959-71—Continued

Country and project	Equipment	Expert
1966		
Algeria: Use of irradiation in agriculture.....	9,000	9,600
Ethiopia: Health physics.....	8,400	-----
Ghana: Health physics.....	9,000	19,200
Kenya: Isotopes in agriculture.....	11,000	9,600
Nigeria:		
Isotopes in agriculture.....	7,000	-----
Isotopes in hydrology.....	-----	9,600
Senegal:		
Isotopes in medicine.....	6,000	19,200
Isotopes in agriculture.....	5,000	3,200
Sudan:		
Radiochemistry.....	9,000	-----
Hospital physics.....	4,700	19,200
Tunisia:		
Isotopes in hydrology.....	11,000	4,800
Radiation protection.....	8,500	4,800
UAR:		
Environmental protection.....	12,000	4,800
Reactor engineering.....	3,000	4,800
Heat transfer in a reactor.....	7,000	6,400
1965		
Congo:		
Nuclear electronics.....	10,000	9,600
Radiobiology.....	-----	9,600
Ghana:		
Reactor programming.....	-----	19,200
Nuclear physics.....	-----	14,400
Morocco: Raw materials analysis.....	-----	4,800
Senegal:		
Isotopes in medicine.....	-----	19,200
Isotopes in agriculture.....	-----	3,200
Tunisia: Raw materials prospection.....	-----	9,600
UAR:		
Isotopes in industry.....	-----	9,600
Raw materials analysis.....	8,000	4,800
Radiation protection.....	-----	14,400
UK for Southern Rhodesia:		
Isotopes in Hydrology.....	7,200	3,200
Scientific documentation.....	7,500	-----
1964		
Congo: Radiochemistry.....	20,000	9,600
Ghana: Isotopes in agriculture.....	-----	19,200
Morocco:		
Isotopes in medicine ¹	14,000	4,800
Isotopes in entomology.....	-----	9,600
Nigeria: Isotopes in medicine ¹	15,000	4,800
Sudan: Isotopes in agriculture.....	10,000	19,200
Tunisia:		
Isotopes in hydrology.....	2,000	11,600
Pesticide chemistry.....	1,000	1,600
Scientific documentation.....	7,500	-----
UAR:		
Isotopes in agriculture.....	3,200	-----
Raw materials prospection.....	2,000	4,800
Waste management.....	-----	19,200
Scientific documentation.....	6,000	-----
1963		
Ghana: Isotopes in medicine.....	-----	19,200
Morocco: Raw materials analysis.....	18,000	9,600
Tunisia: Nuclear physics.....	10,000	-----
UAR:		
Raw materials prospection.....	8,000	4,800
Health physics.....	-----	9,600
Scientific documentation.....	28,000	4,800
Physical chemistry ¹	28,000	4,800
Congo: Nuclear instrumentation ¹	50,000	-----
1962		
Ghana:		
Isotopes in agriculture.....	-----	17,400
Health Physics.....	-----	17,400
Tunisia:		
Isotopes in agriculture.....	100	17,400
Radiation protection.....	-----	4,350
UAR: Raw materials prospection.....	12,650	4,350

See footnotes at end of table.

IAEA TECHNICAL ASSISTANCE (EQUIPMENT AND EXPERTS) PROVIDED TO AFRICAN COUNTRIES 1959-71—Continued

Country and project	Equipment	Expert
1961		
Morocco: Isotopes in agriculture.....	7,600	.....
Sudan: Raw materials analysis.....	9,300	.....
Tunisia: Isotopes in medicine.....	2,900	.....
UAR:		
Isotopes in agriculture.....	37,877	.....
Isotopes in medicine.....	37,877	.....
Isotopes in industry.....	37,877	.....
1960		
UAR:		
Radioisotopes in medicine.....	77,000	8,500
Radioisotopes in agriculture.....	22,000	.....
Standardization laboratory.....	10,000	.....
Raw materials prospection ¹	9,000	.....
Tunisia:		
Agricultural chemistry.....	5,000	17,400
Medical diagnosis.....	4,000	11,400
1959		
Tunisia.....	6,809	30,376
UAR.....	18,161	60,826

¹ Represents projects for which the United States has provided equipment.

Mr. Diggs. In this program of scientific cooperation, what U.S. Atomic Energy Commission projects and facilities have been made available and are available to scientists from South Africa since the beginning of these projects, not just 1971, but since the beginning of this program.

Mr. FLAHERTY. I have with me a list of the South Africans currently in the United States. These are five scientists. Two of them are at the Brookhaven National Laboratory, involved in medical research. One is at the Oak Ridge National Laboratory. He is a metallurgist. Two are at Princeton in the Princeton physics laboratory which receives some support from the U.S. Atomic Energy Commission, and these are physicists.

This is the only list I have with me of the current assignments. The past assignments, I would have to furnish for the record.

Mr. Diggs. All right. Without objection, then, the record will be left open at this point for such a provision.

(The information referred to follows:)

SOUTH AFRICAN ASSIGNEES

Name and facility	Date of assignment	Date of completion	Nature of training
Albrecht, Carl F.: ORNL.....	July 18, 1969.....	Sept. 21, 1970.....	Biology.
Andrew, Ann: ORNL.....	Oct. 2, 1963.....	Dec. 30, 1963.....	Do.
Berman, Mervyn: BNL.....	Oct. 1, 1965.....	Aug. 21, 1966.....	.....
Brock, John C. F.: LRL (TE).....	Oct. 4, 1965.....	Nov. 30, 1967.....	Inorganic materials.
Carroll, D. F.: ORNL-ORSORT.....	Feb. 1, 1961.....	Dec. 28, 1962.....	Operation and maintenance of nuclear reactor.
Colley, John R.: ORNL.....	June 27, 1960, Mar. 2, 1961.....	Aug. 26, 1960, Oct. 12, 1961.....	Industrial training.
Crowther, Peter:			
ORNL.....	Aug. 29, 1962.....	Aug. 30, 1963.....	Do.
ORNL (TE).....	Aug. 30, 1963.....	June 5, 1964.....	.....
Dawes, Marion E.: ORINS.....	Mar. 16, 1964.....	June 30, 1964.....	Radiation training course.
Devilliers, Jacobus W. L.:			
ISNS & E/ANL 9th.....	Aug. 17, 1959.....	Dec. 14, 1959.....	IINSE (P), IINSE (A) and Industrial Training.
IINS & E.....	Feb. 1960.....	Aug. 1961.....	.....
BNL.....	Sept. 1961.....	Jan. 12, 1962.....	.....
Devilliers, Johannes A. M.: IINS & E.....	Dec. 1961.....	Sept. 27, 1963.....	IINSE (A).

SOUTH AFRICAN ASSIGNEES—Continued

Name and facility	Date of assignment	Date of completion	Nature of training
Dorfan, David E.:			
BNL	July 14, 1964	July 13, 1966	High energy physics.
Columbia Univ. (TE)	June 1, 1964	June 30, 1966	
SLAC (TE)	Sept. 7, 1966	Aug. 30, 1968	
Duplessis, Adriaan J.: IINS & E	Oct. 4, 1961	Jan. 31, 1964	Engineering.
Duplessis, I. D.: ORNL	Feb. 1, 1961	Dec. 29, 1961	Maintenance of reactor control gear and instruments.
Dupreez, Willem H.: ORNL	Oct. 9, 1961	Aug. 23, 1963	Industrial training.
Dutoit, Stefamis: IINSE—Area 1	Feb. 3, 1960	June 2, 1961	IINSE (A).
Elliott, Guy: ORINS Hospital	Dec. 1, 1958	Mar. 1959	Industrial training.
Engelbrecht, Christian A.: IINS & E	Jan. 1962	Jan. 31, 1964	IINSE (P).
Faure, Abraham: ORNL	May 1, 1961	Mar. 29, 1962	Industrial training.
Ferguson, Stuart D.: ORNL	Mar. 4, 1964	June 19, 1964	Engineering.
Fewster, Mona E.: UCLA	July 19, 1963	Mar. 15, 1971	Nuclear medicine and radiation biology.
Dippenaar, Rian Johannes: ORNL	Dec. 3, 1970.	1 yr. extended 2 mos.	Metallurgy.
Gabie, Vivian: ORNL	Oct. 2, 1963	Dec. 30, 1963	Biology.
Grant, Walter L.: IINSE & E	Feb. 3, 1960	June 2, 1961	IINSE (P).
Griss, Martin L.: BNL	July 21, 1970	Aug. 21, 1970	Physics.
Haasbroek, Floris J.: BNL	Sept. 1961	Apr. 13, 1962	Industrial training.
Hampton, Verner: ISNS & E/ANL	Feb. 6, 1957	Nov. 1, 1957	IINSE (P).
Hoffenberg, Raymond: ORINS	May 19, 1958	June 13, 1958	ORINS.
Hugo, Jacques P. B.: IINS & E	June 8, 1960	June 2, 1961	IINSE (P).
Jach, Joseph:			
BNL	Jan. 1958	June 1, 1963	Industrial training.
BNL (TE)	June 1, 1963	Aug. 31, 1963	
BNL	Aug. 31, 1963	June 1, 1964	
BNL (TE)	June 1, 1964	June 3, 1966	
Jenkins, William L.: ORAU	Aug. 7, 1967	Sept. 1, 1967	Basic research course.
Joubert, Pieter J.: ORNL	June 27, 1960, Jan. 25, 1961.	Aug. 26, 1960, Feb. 20, 1962.	Industrial training.
Joubert, Septimus M.:			
BNL (TE)	Apr. 1963	Mar. 26, 1964	Nuclear research.
BNL	Mar. 26, 1964	June 30, 1968	
Jurriaanse, Aart: ORNL	Jan. 6, 1966	Jan. 13, 1967	Analytical chemistry.
Kamau, Angelina W.: ACRH (TE)	July 22, 1963	May 3, 1965	
Kamau, Mungai: ACRH (TE)	Feb. 2, 1965	Aug. 13, 1965	
Lauterbach, Herbert H.: ORSORT	Sept. 15, 1964	Mar. 15, 1966	Mechanical engineering.
Le Rouz, Lodewikus J.: IINS & E	Feb. 3, 1960, Oct. 5, 1960.	May 27, 1960, June 2, 1961.	IINSE (P), IINSE (A).
Lemmer, Richard H.:			
UCRL	June 1961	Sept. 1961	Industrial training.
LRL (TE)	June 16, 1965	Sept. 15, 1965	
Levitt, Michael: LRL	July 12, 1966	Sept. 9, 1966	Biophysics, radiobiology.
Liebenberg, Johannes C.: ORSORT	Sept. 15, 1964	Sept. 10, 1965	ORNL (S).
Ludewig, Hans: BNL (TE)	Jan. 13, 1966	Oct. 2, 1970	Engineering.
Malan, Herman P.: ORINS	Sept. 9, 1957	Oct. 4, 1957	ORINS.
Mayr, Siegfried T.: ORNL	Sept. 2, 1966	June 21, 1967	Nuclear engineering.
Metz, Jack: BNL	June 30, 1967	July 14, 1967	
Meyer, Basil S.: SLAC	Oct. 2, 1970	Aug. 3, 1971	Physics.
Mohr, Jacobus G.:			
BNL	Apr. 1963	Apr. 8, 1965	Engineering.
BNL	Apr. 9, 1965	Nov. 30, 1965	
Moller, Christiaan: ORNL	June 27, 1960, Feb. 1, 1961.	Aug. 26, 1960, Dec. 29, 1961.	Industrial training.
Peisach, Max: ORNL	May 4, 1965	May 24, 1965	Analytical chemistry.
Pienaar, Noel P.: ORNL	Sept. 20, 1962	July 31, 1964	Industrial training.
Rabson, S. R.: H & SL-NYOO	Mar. 6, 1957	May 10, 1957	HASL.
Ramsbottom, Charles A.: BNL	Aug. 19, 1963	Feb. 10, 1964	Nuclear research.
Raubenheimer, Louis J.: ORNL	Nov. 13, 1964	Oct. 14, 1966	Solid state physics.
Reitman, Daniel: IINS & E	Dec. 1961	Aug. 30, 1963	IINSE (A).
Rolle, Ranier:			
BNL	Mar. 1962	Aug. 24, 1962	Industrial training.
ORNL	Oct. 15, 1962	July 24, 1963	
Sellschop, Jacques P. F.: BNL	Aug. 1, 1966	Dec. 31, 1966	
Senior, Boris: BNL	Feb. 7, 1966	Feb. 10, 1966	
Slabber, Johannes F.: ORSORT	Sept. 14, 1964	Jan. 26, 1966	ORNL (S).
Smit, Martinus C.: LRL	Mar. 3, 1969	Mar. 1, 1970	Metallurgy.
Snyders, Leon S.: ORNL	Sept. 14, 1964	Sept. 16, 1966	
Sonnendecker, Ernst W.: ACRH (TE)	Feb. 1, 1966	July 27, 1966	
Stein, Hyman B.: BNL	Oct. 6, 1964	Mar. 31, 1965	Pathology.
Sutin, Norman: BNL (RE)	Jan. 5, 1956	June 21, 1963	Industrial training.
Thresher, John J.: UCRL	May 1961	Nov. 1962	Or.
Van Der Spuy, Ernst: ORNL	June 27, 1960, Feb. 1, 1961.	Aug. 26, 1960, Jan. 19, 1962.	Industrial training, ORNL (H).
Van Der Merwe, Cornelius J.: BNL	May 1962	July 27, 1962	Industrial training.
Van Der Merwe, Paul du Toit: LRL (TE)	Oct. 21, 1963	Dec. 10, 1965	Theoretical physics.
Van Oer Walt, Richard: ORNL	Aug. 3, 1961	Nov. 30, 1962	Industrial training.
Verwey, C. J.: H & SL-NYOO	Mar. 6, 1957	June 7, 1957	HASL.
Vincent, Christopher M.: ANL (TE)	Sept. 18, 1967	Aug. 21, 1970	Physics.
Walker, Roy A.: ORNL	Sept. 25, 1961	Jan. 25, 1963	Industrial training.
Weidemann, Wolfhart K. H. A.: IINS & E	Nov. 8, 1962	Oct. 30, 1963	IINSE (A).
Weinbren, Maurice P.: PRNC	Feb. 7, 1962	May 4, 1966	PRNC.
	Mar. 5, 1962.	Mar. 30, 1962.	Radiation training course.

Mr. DIGGS. What about classified projects?

Mr. FLAHERTY. There are none.

Mr. DIGGS. So this represents a complete picture? That is what we are trying to find out.

Mr. FLAHERTY. Yes, sir; to the best of my knowledge. I am trying to give the complete picture of the involvement of the U.S. Atomic Energy Commission with South Africa.

Mr. DIGGS. You mentioned South Africans actually participating in projects. How about South African scientists who have visited classified and unclassified projects?

Mr. FLAHERTY. There were three South African visitors to AEC facilities in 1971. None of these visits involved access to classified information. I could undertake to supply for the record past visits, if you wish.

What starting dates should we use? The agreement started in 1957. Perhaps we should try to supply it from that time.

Mr. DIGGS. All right. Also, projects in which AEC has been involved in South Africa; the specifics of those.

Mr. FLAHERTY. As far as I know, the only project in which we have been involved in South Africa, Mr. Chairman, is the one mentioned in my statement regarding the neutrino experiments. We have had some visitors to South Africa in connection with our purchases of uranium in the past. At that time, we had, I think, a metallurgist assigned there in a quality control post to be sure the material delivered to us was as specified.

But I think the only project in South Africa in which we have been engaged is the University of California program I mentioned.

(The information referred to follows:)

This is a list of South African visitors to AEC facilities since and including 1965. We do not have records for such visits prior to 1965.

SOUTH AFRICAN VISITS

Name	Affiliation	Facility visited	Date of visit	Interest
Helberg, Manfred A.	University of Natal	ORNL	May 7, 1971	Theoretical plasma physics and computational physics.
		LASL	May 17, 1971	Plasma physics including Q-machine studies.
		LRL	June 2, 1971	Fusion research.
Bruins, Leo D.	CSIR	BNL	Aug. 26, 1971	Isotope production on 200-Mev. injector and general tour.
Strasheim, Albertus	CSIR	LASL	Oct. 29, 1971	Spectrochemistry and C ¹⁴ .
Smit, Marthinus C. B.	SAARB	ANL	Feb. 26, 1970	Thermodynamic properties of liquid Na in nuclear power systems.
		BNL	Feb. 27, 1970	Copolymer concretes.
	Rand Mines, Ltd.	do	Apr. 6-10, 1970	
		do	Apr. 13-17, 1970	
Stern, Danko J.	HUME, Ltd., Germiston, S.D.	do	Apr. 6-10, 1970	Polymerization of monomers by cobalt irradiation.
		do	Apr. 13-17, 1970	
Hurlin, Gerrick C.	SAARB	HQ	May 19, 1970	Publicity and education aspects of nuclear power.
		ORNL	May 29, 1970	
Devilliers, H. J.	Electric Supply Commission, Republic of South Africa.	HQ	May 29, 1970	Enriched uranium supply.
		do	May 26, 1970	
Straszacker, R. L.	do	do	do	do.
Reitmann, Daniel	SAARB, Pelindaba	ORNL	May 28, 1970	Low energy nuclear physics, neutron physics.
		ANL	June 1-3, 1970	Van de Graff accelerator development, on-line computers.
Pistorius, Carl W.	CSIR	AI	June 24, 1970	High pressure phase diagrams.
Van Der Walt, Richard	SAARB, Pelindaba	ORNL	July 24, 1970	MSR and reactor physics.
		ANL	July 27-28, 1970	ZPR6—fast reactor physics.
		EBR II	July 30, 1970	Fast reactor physics—EBR II and ZPPR.
Retief, Johannes V.	SAARB	LRL	Aug. 27, 1970	Plowshare R. & D., explosion predictions, rock mechanics.
		Sandia Laboratory	Sept. 3, 1970	High explosive cratering tests, airblast prediction.
Fourie, Jacobus T.	CSIR	do	Aug. 27, 1970	High temperature and ultrahigh vacuum experiments.
Kaplan, Maurice F.	University of Cape Town	ORNL	Sept. 4, 1970	Effects of radiation on concrete. Concrete pressure vessels for nuclear reactors.
		BNL	Sept. 3, 1970	Concrete-polymer materials.

Rautenbach, Willem L.	CSIR	ORNL	Oct. 29-30, 1970	Cyclotron produced isotopes.
Pienaar, N. P.	SAAEB	LRL-B HQ, DLR HQ, RDT	Nov. 11-12, 1970 Nov. 2, 1970 Nov. 3, 1970	88-inches Cyclotron and Hilac, medical use of isotopes. Pressure vessel integrity, embrittlement, and fatigue, stress corrosion.
Colley	Electric Supply Commission, South Africa.	ORNL HQ, ORL ORNL	Nov. 5-6, 9, 1970 Nov. 2-3, 1970 Nov. 5, 6, 9, 1970	PV integrity, embrittlement, fatigue.
Malan, Jan G.	SAAEB	do	Dec. 21, 1970	(p, n) reactions and differential cross-section measurements.
Barnard, Erick	do	do	Feb. 19, 1969	Fast neutron cross sections and Van de Graff development.
Basson, Johan K.	do	ANL	Feb. 24, 1969	Reactor licensing and safety evaluation.
Devillers, Jacobus W. L.	do	HQ, Germantown ANL	Apr. 28-29, 1969 Apr. 5-16, 1969	Do.
Tattersall, John O.	do	HQ, Germantown ANL	Apr. 28-29, 1969 Apr. 5-16, 1969	Do.
Weidemann, Wolfhart K. H. A.	do	HQ, Germantown ANL	Apr. 28-29, 1969 Apr. 5-16, 1969	Do.
Basson, Rocco A.	do	HQ, Germantown BNL	Apr. 28-29, 1969 Apr. 5-16, 1969	Applied radiation chemistry projects.
Kritzinger, Johan J.	Southern Universities Nuclear Institute, Faure, South Africa.	ORNL	July 30, 1969	Van de Graff and Cyclotron operation.
Gordon, Sydney M.	SAAEB	ANL	Sept. 17, 1969	Mass spectrometry.
Van Der Linde, H. J.	do	do	Oct. 1, 1969	Experimental techniques in radiation chemistry.
Paynter, J. C.	do	BNL	Oct. 6, 1969	Continuous ion-exchange recovery of uranium.
Mingay, Donald W.	University of Witwatersrand, South Africa.	HQ, DRM LASL	Apr. 4, 1968 July 5, 1968	Tours of laboratory—visit denied.
Van Lier, A. G.	S. A. CSIR	ORNL	July 30, 1968	Use of small computer processing data from nuclear experiments.
Urban, Martin R.	The Corner House Laboratories, Ltd	LRL	Aug. 5, 1968	Orientation in liquid ion exchange.
Urban, Jocelyn P.	University of Witwatersrand	ORNL	Oct. 23, 1968	General tour (with husband).
Butler, Louis R. P.	S.A. CSIR	do	do	Atomic absorption techniques.
Cilliers, Willem A.	University of Cape Town.	LASL LRL	July 13, 1967 Aug. 2, 1966	Plasma containment in the theta-pinch-general plasma diagnostics.
Ronde, Johannes D.	SAAEB	ORNL	Aug. 4, 1966 Aug. 21-22-1967	Organization and functions of department of mathematics.
Schumann, Theodor E.	do	ANL	Aug. 24-25, 1967	Computer usage, possible exchange of computer programs for nuclear energy applications.
		ORNL	Sept. 8-9, 1967	Visit the ORR and HIFR.

See footnote at end of table.

SOUTH AFRICAN VISITS—Continued

Name	Affiliation	Facility visited	Date of visit	Interest
Devillers, Johannes A. M.	do	ANL	Sept. 18, 1967	Fast neutron physics, Van de Graff accelerators and on-line computers, equipment used with accelerators, solid state detectors—manufacture and use.
McMurray, William R.	Southern Universities Nuclear Institute, Faure, South Africa.	ORNL	Sept. 20, 1967	Van de Graff accelerators and associated equipment, fast neutron physics
Janse Van Rensburg, Salomon	SAAEB	do	Sept. 25, 1967	Van de Graff physics, neutron reaction and nuclear structure.
Heymann, Gerhardt	S.A. CSIR	ANL	Sept. 28-29, 1967	Van de Graff physics, nuclear data, nuclear structure.
		ORNL	May 31-June 1, 1966	Analytical mass spectrometry of uranium, boron, etc.
		New Brunswick	June 2-3, 1966	
		LASL	Sept. 19, 1966	Low energy single and double nucleon transfer reactions.
		LRL	Oct. 5, 1966	
		BNL	Sept. 23, 1966	
		ANL	Oct. 13, 1966	
Grant, Walter L.	SAAEB	BNL	Oct. 11, 1966	Reactor concepts, natural U fueled, heavy water moderated, sodium cooled, sodium technology.
		AI	Oct. 14, 1966	Settled bed reactor concept.
Strasheim, Albertus	National Physical Research Laboratory	LASL	Aug. 20, 1965	General nuclear research and neutron activation, fundamental spectroscopy
Loubser, Raimund S.	SAAEB	HQ	Aug. 30, 31, Sept. 1, 1965	Nuclear research and statutory control functions.
		ANL	Sept. 7-8, 1965	
		WRTS	Sept. 10, 1965	
		AI	Sept. 13, 1965	
		ORNL	Sept. 20-21, 1965	
		BNL	Sept. 24, 1965	
		BMI	Sept. 3, 1965	
		GA	Sept. 15, 1965	
Hemens, Julian	National Institute for Water Research	HAPO	Sept. 2, 1965	Physiology, pesticides, herbicides and molluscicides, radiobiology, population studies, bottom studies, anaerobic digestion.
Delange, Pieter W.	SAAEB	ANL	Oct. 4, 1965	Experimental reactor physics, determination of lattice parameters.
		SRO	Oct. 5, 1965	
		BNL	Oct. 6, 1965	

¹ Council for Scientific and Industrial Research.

² South African Atomic Energy Board.

Mr. DIGGS. The Prime Minister credits two scientists, a Dr. A. J. Roux and a Dr. W. L. Grant as having developed the South African nuclear program. Has either of these two gentlemen received any training, or participated in any AEC projects or scientific program in this country?

Mr. FLAHERTY. Dr. Roux is, of course, the head of the South African Atomic Energy Agency. I am not aware that he has received training in the United States. He has visited the United States in his role as head of their atomic energy program, but he has not received training in the United States.

I do not know Dr. Grant, and we would have to check the list which I promised to supply, and see if his name is on it.

(The document to be furnished follows:)

As you will note from the list of South African assignees furnished, Mr. W. L. Grant was assigned to the Argonne National Laboratory's International Institute of Nuclear Science and Engineering from February 3, 1960 to June 2, 1961 for training in physics.

Dr. A. J. A. Roux did not receive any training at any AEC facilities.

Mr. DIGGS. Could you answer the question about projects or programs in which the AEC has participated or sent members to, or facilitated such projects as far as South Africa is concerned?

Mr. FLAHERTY. The principal program of which I am aware is the one for the neutrino experiment mentioned in my statement. This experiment started in late 1963. Did you want me to describe this in some detail, Mr. Chairman?

I could do that. This project started in 1963, under Professor Reines, who at that time was at Case Institute.

In 1967, Professor Reines moved to the University of California campus at Irvine, Calif., and continued directing the same program.

This was a cooperative program between the U.S. universities and the University of Witwatersrand.

South Africa was chosen for the location because it possessed the deepest available hole in the ground. Professor Reines made a worldwide search for a suitable location, and the one at the Rand mines, where they had shafts that were located 2 miles underground, appeared to be the most suitable.

The reason for wanting to be so deep underground is that the neutrino is a basic particle about which we are trying to increase our knowledge. It penetrates matter very readily, and in order to shield out other kinds of radiation, it is necessary to have as much material as possible between the detection equipment and the particle entering the atmosphere. This was the reason for going so deep in the mine.

This project involved, during its lifetime, approximately 12 scientists from the University of California who went to South Africa to operate the equipment in the mine, and this, of course, took place over a period of approximately 8 years. There were perhaps three or four scientists in residence at any one time on the project.

The overall program costs were about \$2 million.

Mr. DIGGS. You are acquainted with Dr. Sverre Kongelbeck, who is one of America's chief nuclear missile scientists, who went to South Africa after retiring here.

The last name is Kongelbeck. He was one of our chief—

Mr. FLAHERTY. No, sir; I do not know him.

Mr. DIGGS. It doesn't ring any bell?

Mr. FLAHERTY. No, sir; it does not.

Mr. DIGGS. He is supposed to have retired and gone to South Africa and started working for them in their program, and I was curious if you knew anything about this.

Mr. FLAHERTY. No, sir; I am not aware of it.

Mr. DIGGS. I know we derived advantages from people who retired from Germany and certain other places. This could be a very considerable development.

Mr. FLAHERTY. I agree. I am not, however, acquainted with it.

Mr. DIGGS. I understand you might not have that information immediately available, but would you check with the agency?

Mr. FLAHERTY. We certainly will supply whatever we can.

If it is in the missile field, perhaps DOD or NASA would be a better source, but we will try to see what we can discover.

(The information requested follows:)

Sverre Kongelbeck was granted an AEC Q Clearance on September 11, 1950, for employment as a Consulting Engineer at the University of California Radiation Laboratory, Berkeley, California. He supervised the installation of the concrete slabs for the AEC Bevatron at UCRL, Berkeley. Mr. Kongelbeck's AEC Q Clearance was terminated on July 7, 1951 and he has done no work for us since that time. We understand that he is now working at Johns Hopkins Applied Physics Lab in Silver Spring and his address is listed in the current local telephone directory as 20 Applegrove Road, Silver Spring, Maryland.

Mr. DIGGS. It is reported that West Germany and South Africa, notwithstanding the treaty prohibition on West Germany from making a nuclear weapon, are cooperating on a training program in nuclear research and development. Are you aware of that?

Mr. FLAHERTY. I am not aware of any program between the two countries. Certainly, I believe such a program is possible if it is for the peaceful applications of nuclear energy. I don't believe there would be any prohibitions against such a program.

Mr. DIGGS. In July of last year the Prime Minister of South Africa and a leading South African scientist both commented on what they describe as an unprecedented breakthrough in a new process in the uranium enrichment processing, and went on to say that—the Star on July 25 of last year—described this discovery as developing the ingredients of the atomic bomb, and a British scientist commentator said that once South Africa builds a plant that can produce uranium on a regular basis, they will only have to extend their treatment plants to make it the substance needed for atomic bombs.

Would you comment on that?

Mr. FLAHERTY. On July 20, 1970, the Prime Minister announced in the South African parliament that scientists of the South African Atomic Energy Board had succeeded in developing a new process for uranium enrichment and were engaged in building a pilot plant. To date, the nature of the process has been kept secret.

The Chairman of the South Africa Atomic Energy Board, Dr. Roux, has stated that the process is neither gaseous diffusion or centrifuge. These are the processes we use or are developing in the United States for uranium enrichment. The Prime Minister has stated the process has developed to a stage where it is estimated that a large scale plant can be competitive with existing plants in the West.

Leaders in the project are Dr. Roux and Dr. Grant, whom you mentioned. Both have been associated with this project since the beginning.

The Prime Minister has asserted that South Africa is prepared to cooperate in the process with any non-Communist country prepared to do so. He also said that South Africa is prepared to accept safeguards and inspection of such a plant provided South Africa would not be limited in the peaceful uses of atomic energy. South Africa will not risk disclosure of the process as a result of the inspection system.

In a move to protect the secrets of the enrichment technique South Africa has passed laws stating that any application for an uranium enrichment patent by any agency other than the South African Atomic Energy Board will be illegal.

This represents about all we know about this program. They have announced that it is a secret process for enriching uranium. We are not aware of the nature of the process, and we are not advised of the status of the project as such.

You mentioned that someone said, that if they discovered a way to produce highly enriched uranium, this would provide them with part of the ingredient for weapons capability, and this is certainly quite true.

Mr. DIGGS. What about our own security considerations as they apply to a retired person who had the kind of skills that might be useful in this way? Do we monitor the situation to prevent security violations, or can anybody just resign from one of your projects tomorrow and go anywhere he wants to go without any consideration?

Mr. FLAHERTY. Everyone who has had access to restricted data has an obligation under the Atomic Energy Act not to reveal restricted data to unauthorized persons and this law follows him all of his life. I am not aware of the extent to which the Government may follow the careers of retired employees, nor am I aware of any rule which would prohibit a U.S. citizen from going to South Africa. The law does, however, prohibit a U.S. citizen from revealing restricted data to unauthorized persons, and certainly he is subject to the penalties of the Atomic Energy Act if he violates the act.

Mr. DIGGS. In July of last year, for example, continuing this same line, the AEC facilitated the attendance of Prof. George Bain to attend a scientific symposium in Johannesburg. He is a scientist who worked on the Manhattan project.

Under what kind of restrictions did he go to South Africa in terms of sharing any of his knowledge or revealing any of it?

Mr. FLAHERTY. He was under the requirements of the Atomic Energy Act, and therefore was prohibited from discussing any classified information. He would be in violation of the act if he did share this information.

Mr. DIGGS. Presumably there is a list of countries that a Professor Bain could go to under those circumstances and there are lists of countries that he couldn't go to. Is that correct?

In other words, what are the criteria established under which you would facilitate Professor Bain's trip?

Mr. FLAHERTY. Professor Bain's name is not on my list of AEC-sponsored visitors to South Africa for the years 1968, 1969, or 1970.

However, he would be free to travel to the countries with whom we enjoy diplomatic relations.

(The following information was supplied:)

According to AEC records, Professor George W. Bain has not attended a symposium in South Africa at AEC expense. It is understood, however, that Professor Bain attended the Gondwana System Symposium sponsored by the International Union of Geological Sciences in Cape Town, Johannesburg during the period July 3-25, 1970.

Mr. DIGGS. We have diplomatic relations with Russia.

Mr. FLAHERTY. We have a great deal more cooperation with Russia in the field of atomic energy than we do with South Africa. Russia has a very large program, and we do have agreements covering cooperation with Russia in the peaceful atomic energy field. Dr. Seaborg, who just recently retired as Chairman of the Atomic Energy Commission, visited Russian atomic energy facilities for 3 weeks this year with a party of 19 people.

Mr. DIGGS. Are you saying that the technique of uranium enrichment is open to all, or is there some kind of limitation on dissemination of this information?

Mr. FLAHERTY. No, sir. Uranium enrichment involves the application of information classified under the Atomic Energy Act, Mr. Chairman, and we do not make that available to others.

The President has announced a program under which we have been authorized to undertake negotiations with other countries to provide them with nuclear enrichment information under very specific conditions.

We have just started discussions on this subject with a group of European nations, and with Japan, Australia, and Canada.

None of those discussions have involved South Africa.

But here, again, we would provide that one of the conditions of the international cooperative enrichment project would be the safeguarding of the classified information.

Mr. DIGGS. In other words, you get into the whole question of proliferation of nuclear weapons.

Mr. FLAHERTY. Yes, sir. We certainly would, and the first requirement would be that any such international enrichment plant would be subject to the safeguards administered by the International Atomic Energy Agency.

Mr. DIGGS. Am I correct in understanding that actually there are only three Western countries with enrichment plants, the United States, the United Kingdom, and France?

Mr. FLAHERTY. Well, sir, to the best of my knowledge, these are the only free-world countries with gaseous diffusion plants.

However, Germany, Holland, and the United Kingdom do have a program for uranium enrichment using the gas centrifuge process. They are building two small pilot plants in the Netherlands. The first of them will probably go into operation in about a year's time.

Mr. DIGGS. I have two or three questions here about the economic implications of this development. The South African Financial Mail of July 24, 1970, said that

The development of the uranium enrichment plant can become a mighty earner of foreign exchange. The minister of mines of South Africa said that by 1980, 80,000 tons yearly demand for uranium would mean income for South Africa that may reach a 100 million rand a year.

Vorster has said that South Africa will be in a position to earn \$338 million a year from selling enriched uranium.

What does all this mean in terms of our own posture, our own sales of enriched uranium. What does it mean in terms of the European countries in this market?

Mr. FLAHERTY. Let me say that while I cannot substantiate the numbers given there, we do have our own estimates of the world market for enriched uranium, and they certainly are substantial.

I have these numbers on a basis which I must explain. The average nuclear powerplant's economic life is estimated to be 30 years.

I have numbers that are based on the number of dollars for the life of such plants. These are our estimates, and are on a cumulative basis.

We estimate, for example, that by 1976, and I am reading from a rather large-scale chart, but if I can eyeball the number, it looks like it would be \$8 billion cumulative by 1976, and approximately \$20 billion cumulative by 1980, and so forth. These are in terms of 1971 dollars, and in terms of our own costs for enrichment service, which is \$32 per kilogram.

So indeed, it is a very large business. Certainly, if South Africa were to successfully develop a more economical process than we have, they could compete in the worldwide market, and it would be a very large earner of foreign exchange.

Mr. DIGGS. Speaking of newspaper references, on April 9 of this year the South African Digest reported that the United States has poured some 750,000 rand into the ERPM project—the East Rand Proprietary Mines project—which is a nuclear physics laboratory to detect neutrino interaction.

Mr. FLAHERTY. This is the program I described and I said costs approximately \$2 million. This was a scientific experiment in the deep mine.

Mr. DIGGS. There was Dr. Bells who was a U.S. scientist working on that project. Did we facilitate his association with the project?

Mr. FLAHERTY. I do not have a Dr. Bells on the list of individuals associated with the project.

Mr. DIGGS. Will you make a note to check to see what you can answer for the record on that?

(The information to be furnished follows:)

There was no one associated with the neutrino project by the name of Bells.

Mr. DIGGS. In what way did the AEC facilitate the joint sponsorship of this project by the University of Witwatersrand and the University of California and Case Western Reserve?

Mr. FLAHERTY. The program was located in South Africa primarily because of the existence of a very deep mine. Professor Reines, who was first at Case Institute and later at the University of California at Irvine, undertook to establish the project in South Africa and he felt that it would be desirable to have the collaboration of a local university. The University of Witwatersrand was invited by Case Institute to cooperate on the project and they agreed to do so.

During this program, of course, they did contribute their time and the time of their people, to the program. We did not pay for their collaboration.

Mr. DIGGS. So far, we have been discussing cooperation between South Africa and the United States on the basis of our cooperating with them. How about their cooperation with us, the nature of it?

Does your agency know and understand this new enrichment process that they have been claiming? Have they invited you to come in and look at the process? Have we been given an opportunity to discuss the process with their people?

Mr. FLAHERTY. No, sir. Every nation that has developed an enrichment capability, and I must say that we do not know whether South Africa has or has not, has classified this. That includes us. We have not invited the South Africans to participate in our uranium enrichment program, and they have not invited us to participate in theirs. This is an area that is restricted by every nation in the world at the moment, including South Africa.

Mr. DIGGS. Outside of that, do you feel their cooperation is as great as your cooperation with them?

Mr. FLAHERTY. I think the largest single cooperative act on the part of South Africa was the fact that in 1952 they agreed to divert a large amount of their capital investment from gold mining to uranium mining to supply us with uranium which at that time we badly needed for our weapons program.

I think that that has been the principal thing.

In the area of atomic energy research, I believe that we have been at a more advanced stage pretty much across the board than South Africa, so I would not look for a great deal of help from them.

Mr. DIGGS. What about isotopes? Do we send or sell isotopes to South Africa?

Mr. FLAHERTY. We, of course, do export a whole list of isotopes. I am certain that many of them have gone to South Africa, probably largely for medical purposes.

We can make records of isotope sales to South Africa by the Oak Ridge National Laboratory available to the committee on this.

(The information requested follows:)

Enclosed is a list of the Radioisotopes together with a key for the computer printout. Also enclosed is a list of the Stable Isotopes sold beginning in 1964. Information on Stable Isotopes prior to that time was not in the computer and it is extremely unlikely that any accurate report could be obtained.

All sales prior to July 1967 were coded only that they were sold to South Africa. Since July 1967 they have been coded by individual customers.

STABLE ISOTOPES 1964 THROUGH 1971

Account	Number of shipments	Quantity	Sales value
South Africa:			
4647-0001: B-10	2	10.500	45.75
4647-0007: B-11	2	3.500	127.25
4647-0046: BA-138	1	.200	30.00
4647-0070: CA-40	1	.200	50.00
4647-0071: CA-42	2	.014	125.00
4647-0072: CA-43	2	.025	488.75
4647-0073: CA-44	1	.020	46.00
4647-0075: CA-48	3	.019	342.50
4647-0092: CE-140	1	.100	50.00
4647-0111: Cr-52	1	.020	11.00
4647-0113: Cr-53	1	.020	78.00
4647-0120: Cu-63	2	.070	17.50
4647-0121: Cu-65	1	.020	10.00
4647-0136: Dy-162	1	.040	12.00
4647-0138: Dy-164	1	.040	10.00
4647-0144: Er-168	1	.040	10.00
4647-0145: Er-170	1	.040	20.00
4647-0165: Gd-158	1	.040	20.00
4674-0166: Gd-160	1	.040	26.00
4647-0191: Hf-176	1	.019	114.00
4647-0192: Hf-177	1	.020	30.00
4647-0193: Hf-178	1	.040	20.00
4647-0194: Hf-179	1	.020	31.00
4647-0195: Hf-180	1	.040	20.00
4647-0221: Fe-56	1	.020	3.00
4647-0223: Fe-58	1	.002	7.00
4647-0253: Pb-208	2	.250	82.50
4647-0261: Li-6	3	23.000	359.00
4647-0263: Li-7	2	30.000	30.00
4647-0280: Mg-24	2	.120	42.00
4647-0281: Mg-25	1	.020	42.00
4647-0282: Mg-26	1	.020	38.00
4647-0300: Mo-92	1	.050	15.00
4647-0301: Mo-94	1	.050	25.00
4647-0303: Mo-96	1	.050	12.50
4647-0305: Mo-98	1	.050	10.00
4647-0306: Mo-100	1	.050	25.00
4647-0340: Ni-58	2	.070	17.50
4647-0341: Ni-60	2	.070	14.00
4647-0342: Ni-61	1	.020	110.00
4647-0343: Ni-62	1	.030	42.00
4647-0344: Ni-64	2	.030	405.00
4647-0353: Os-183	1	.020	55.00
4647-0392: K-41	1	.025	125.00
4647-0411: Rb-87	1	.010	16.50
4647-0430: Sm-144	2	.040	143.00
4647-0431: Sm-147	2	.040	36.00
4647-0432: Sm-148	3	.140	154.00
4647-0433: Sm-149	2	.040	36.00
4647-0434: Sm-150	3	.140	217.00
4647-0435: Sm-152	3	.120	54.00
4647-0436: Sm-154	2	.040	20.00
4647-0540: Si-28	1	.020	22.00
4647-0451: Si-29	1	.020	62.00
4647-0452: Si-30	1	.020	78.00
4647-0470: Sr-84	1	.010	76.00
4647-0473: Sr-88	3	.700	35.00
4647-0525: Sn-118	1	.150	22.50
4647-0554: W-186	1	.040	10.00
4647-0575: Yb-174	1	.040	10.00
4647-0576: Yb-176	1	.040	16.00
4647-0590: Zn-64	2	.120	42.00
4647-0591: Zn-66	2	.120	66.00
4650-0005: TSC *		.000	450.00
4659-0204: TSC *		.000	100.00
Subtotal	92	70.884	4,860.25

STABLE ISOTOPES 1954 THROUGH 1971—Continued

Account	Number of shipments	Quantity	Sales value
J. A. Ewing & McDonald, Inc. (R250):			
4647-0265: Li-6	1	50.000	137.50
4647-0340: Ni-58	1	1.000	150.00
Subtotal	2	51.000	287.50
Merensky Institute for Physics (R250):			
4647-0100: Cl-35	2	.185	92.50
4647-0282: Mg-26	1	.035	26.25
4647-0390: K-39	1	.100	80.00
4647-0392: K-41	1	.040	200.00
4647-0481: S-33	1	.015	240.00
4647-0482: S-34	1	.015	243.75
4647-0593: Zn-68	1	.035	28.00
4650-0005: TSC		.000	1,350.00
Subtotal	8	.425	2,260.50
Daniel F. Young, Inc. (R250):			
4647-0071: Ca-41	1	.020	170.00
4647-0142: Er-156	1	.040	16.00
4647-0143: Er-167	2	.120	60.00
4647-0163: Gd-156	1	.060	54.00
4647-0164: Gd-157	1	.060	57.00
4647-0165: Gd-158	1	.080	44.00
4647-0231: Li-6	1	5.000	38.75
4647-0253: Li-7	1	5.000	5.00
4647-0270: Lu-175	1	.100	35.00
4647-0280: Mg-24	1	.200	70.00
4647-0281: Mg-25	1	.100	120.00
4647-0282: Mg-26	1	.100	75.00
4647-0310: Nd-142	1	.060	15.00
4647-0312: Nd-144	1	.060	18.00
4647-0361: O-17	1	.141	225.00
4647-0574: Yb-173	1	.060	24.00
Subtotal	17	11.291	1,026.75
O. Roetger (R250):			
4647-0001: B-10	3	6.000	69.00
4647-0007: B-11	1	2.000	188.00
4647-0261: Li-6	1	2.000	16.00
4647-0263: Li-7	1	2.000	2.00
Subtotal	6	12.000	275.00
Potchefstroom University (R250):			
4647-0180: Ge-70	1	1.000	350.00
Subtotal	1	1.000	350.00
South Africa Atomic Energy Board (R250):			
4647-0075: Ca-48	1	.020	455.00
4647-0112: Cr-53	1	.040	36.00
4647-0171: Ga-71	1	.025	46.25
4647-0182: Ge-73	1	.025	25.00
4647-0265: Li-6	1	12.500	100.00
4647-0280: Mg-24	1	.200	70.00
4647-0281: Mg-25	1	.100	210.00
4647-0282: Mg-26	1	.100	190.00
4647-0543: Ti-47	1	.040	46.00
4650-0005: TSC		.000	150.00
Subtotal	9	13.050	1,328.25

STABLE ISOTOPES 1964 THROUGH 1971—Continued

Account	Number of shipments	Quantity	Sales value
Southern Universities Nuclear Institute (R250):			
4647-0001: B-10.....	1	2.000	14.00
4647-0004: B-11.....	1	1.000	15.00
4647-0050: Br-79.....	1	.020	42.00
4647-0051: Br-81.....	1	.020	42.00
4647-0070: CA-40.....	1	.200	50.00
4647-0072: CA-43.....	1	.005	175.00
4647-0075: CA-48.....	2	.015	390.00
4647-0110: Cr-50.....	1	.010	23.00
4647-0112: Cr-53.....	1	.020	18.00
4647-0113: Cr-54.....	1	.010	39.00
4647-0120: Cu-63.....	1	.025	5.00
4647-0121: Cu-65.....	1	.025	8.75
4647-0170: GA-69.....	1	.020	17.00
4647-0171: GA-71.....	1	.020	37.00
4647-0220: Fe-54.....	1	.010	15.00
4647-0222: Fe-57.....	1	.010	38.00
4647-0223: Fe-58.....	1	.005	113.75
4647-0264: Li-7.....	2	10.000	30.00
4647-0265: Li-6.....	2	8.000	22.00
4647-0280: Mg-24.....	1	.100	35.00
4647-0340: Ni-58.....	1	.065	9.75
4647-0341: Ni-60.....	1	.040	8.00
4647-0343: Ni-62.....	1	.010	16.00
4647-0480: S-32.....	1	.010	10.00
4647-0481: S-33.....	1	.002	32.00
4647-0482: S-34.....	1	.002	7.80
4647-0483: S-36.....	2	.002	610.00
4647-0541: Ti-47.....	1	.020	27.00
4647-0593: Zn-68.....	1	.020	16.00
Subtotal.....	33	21,686	1,866.05
Witwatersrand University (R250):			
4647-0250: Pb-204.....	2	.006	107.50
4647-0252: Pb-207.....	4	.031	99.65
4647-0253: Pb-208.....	1	.010	2.00
4647-0392: K-41.....	3	.054	270.00
4647-0411: Rb-87.....	2	.030	34.50
4647-0470: Sr-84.....	2	.015	245.00
4650-0005: TSC*.....		.000	250.00
Subtotal.....	14	.146	1,008.65
Grand total.....	182	181.392	13,262.95

KEY FOR COMPUTER PRINTOUT

0000—Handling Charge

0108—Iodine-129

0110—Zirconium-95

0111—Niobium-95

0191—Service Irradiation

0193—Service Irradiation

0203—Technical Service Charge

0284—Calcium-47

0305—Iodine-130

0313—Iron-55

0314—Iron-55

0315—Iron-59

0358—Strontium-85

92500—The country of South Africa. All sales prior to July 1967 were coded only that they were to the country of South Africa.

92514—South Africa Atomic Energy Board, Pretoria, South Africa.

Account	Sub.	Cust.	Number of shipments	Quantity	Value	Date
3661	0313	92,500			\$5	July 4, 1958
3661	0315	92,500	1	3,000	150	Nov. 14, 1958
3661	0313	92,500		100		July 4, 1958
3654	0110	92,500	1	10,000	20	Aug. 14, 1958
3631	0000	92,500			16	Aug. —, 1958
3654	0111	92,500	1	10,000	100	Oct. 23, 1958
3631	0000	92,500			16	Oct. —, 1958
3661	0314	92,500	1	1,000	60	Jan. 17, 1958
3661	0315	92,500	1	1,500	35	Jan. 31, 1958
3661	0314	92,500	1	2,000	110	Jan. 10, 1958
3661	0315	92,500	1	500	35	Apr. 11, 1958
3661	0315	92,500	1	500	35	June 13, 1958
3661	0315	92,500	1	500	25	Aug. 29, 1958
3631	0000	92,500			16	Aug. —, 1958
3661	0315	92,500	1	3,000	150	Sept. 19, 1958
3631	0000	92,500			16	Do.
3661	0315	92,500	1	200	10	Oct. 10, 1958
3631	0000	92,500			16	Oct. —, 1958
3631	0000	92,500			16	June 12, 1959
3661	0315	92,500	1	500	15	Do.
3631	0000	92,500			16	July 24, 1959
3631	0000	92,500			16	Oct. 9, 1959
3661	0315	92,500	1	1,000	30	Do.
3661	0315	92,500	1	500	15	Do.
3631	0000	92,500			16	Nov. 20, 1959
3631	0000	92,500			16	Dec. 11, 1959
3631	0000	92,500			16	Dec. 23, 1959
3661	0314	92,500	1	1,000	50	Dec. 11, 1959
3661	0315	92,500	1	500	15	Dec. 25, 1959
3661	0315	92,500	1	500	25	Feb. 13, 1959
3661	0315	92,500	1	500	15	July 24, 1959
3631	0000	92,500			16	Feb. 13, 1959
3661	0315	92,500	1	500	25	May 8, 1959
3631	0000	92,500			16	Do.
3661	0315	92,500	1	500	15	Nov. 20, 1959
3661	0314	92,500	1	1,000	50	Sept. 2, 1960
3661	0358	92,500	1	100	5	Nov. 3, 1960
3661	0315	92,500	1	500	15	Aug. 26, 1960
3661	0315	92,500	1	500	15	July 22, 1960
3661	0315	92,500	1	500	15	Mar. 4, 1960
3661	0315	92,500		450		Apr. 8, 1960
3661	0315	92,500	1	50	15	Do.
3661	0315	92,500	1	500	15	May 13, 1960
3661	0315	92,500	1	500	15	Jan. 29, 1960
3661	0315	92,500	1	500	15	Dec. 9, 1960
3661	0315	92,500	1	500	15	Sept. 9, 1960
3661	0315	92,500	1	500	15	Sept. 30, 1960
3661	0315	92,500	1	500	15	Nov. 4, 1960
3661	0315	92,500	1	3,000	90	June 24, 1960
3661	0315	92,500	1	500	15	June 17, 1960
3631	0000	92,500			20	Nov. 3, 1960
3631	0000	92,500			20	Sept. 2, 1960
3631	0000	92,500			20	Sept. 9, 1960
3631	0000	92,500			20	Sept. 30, 1960
3631	0000	92,500			20	Dec. 9, 1960
3631	0000	92,500			20	July 22, 1960
3631	0000	92,500			20	Apr. 8, 1960
3631	0000	92,500			20	May 13, 1960
3631	0000	92,500			20	June 17, 1960
3631	0000	92,500			20	June 24, 1960
3631	0000	92,500			20	Nov. 4, 1960
3631	0000	92,500			20	Aug. 26, 1960
3631	0000	92,500			20	Mar. 4, 1960
3631	0000	92,500			20	Jan. 29, 1960
3631	0000	92,500			20	Feb. 5, 1962
3631	0000	92,500			20	Jan. 8, 1962
3631	0000	92,500			20	Mar. 5, 1962
3631	0000	92,500			20	Apr. 2, 1962
3631	0000	92,500			20	Apr. 30, 1962
3631	0000	92,500			20	May 28, 1962
3631	0000	92,500			20	June 25, 1962
3661	0284	92,500	1	600	120	Jan. 8, 1962
3661	0284	92,500	1	600	120	Feb. 5, 1962
3661	0284	92,500	1	600	120	Mar. 5, 1962
3661	0284	92,500	1	600	120	Apr. 2, 1962
3661	0284	92,500	1	600	120	Apr. 30, 1962
3661	0284	92,500	1	300	60	May 28, 1962
3661	0284	92,500	1	600	120	June 25, 1962
3631	0000	92,500			20	Feb. 2, 1962
3631	0000	92,500			20	Mar. 9, 1962
3631	0000	92,500			20	Apr. 13, 1962
3631	0000	92,500			20	May 18, 1962

Account	Sub.	Cust.	Number of shipments	Quantity	Value	Date
3631	0000	92,500			20	June 22, 1962
3661	0315	92,500	1	500	15	Feb. 2, 1962
3661	0315	92,500	1	500	15	Mar. 9, 1962
3661	0315	92,500	1	500	15	Apr. 13, 1962
3661	0315	92,500	1	500	15	May 18, 1962
3661	0315	92,500	1	500	15	June 22, 1962
3631	0000	92,500			20	Jan. 17, 1962
3631	0000	92,500			20	Mar. 21, 1962
3631	0000	92,500			20	Apr. 3, 1962
3631	0000	92,500			20	Apr. 19, 1962
3631	0000	92,500			20	May 30, 1962
3659	0203	92,500			2	Apr. 19, 1962
3661	0314	92,500	1	10,000	500	Apr. 3, 1962
3661	0314	92,500	1	10,000	500	Apr. 19, 1962
3661	0315	92,500	1	1,000	30	Jan. 17, 1962
3661	0315	92,500	1	1,000	30	Mar. 21, 1962
3661	0315	92,500	1	1,000	30	May 30, 1962
3661	0315	92,500	1	500	15	Dec. 29, 1961
3631	0000	92,500			20	Do.
3631	0000	92,500			20	June 26, 1961
3661	0284	92,500	1	600	120	Do.
3661	0284	92,500	1	400	80	May 1, 1961
3661	0284	92,500	1	600	120	May 29, 1961
3631	0000	92,500			20	May 1, 1961
3631	0000	92,500			20	May 29, 1961
3631	0000	92,500			20	July 24, 1961
3631	0000	92,500			20	Aug. 21, 1961
3631	0000	92,500			20	Sept. 18, 1961
3631	0000	92,500			20	Oct. 16, 1961
3631	0000	92,500			20	Nov. 13, 1961
3661	0284	92,500	1	600	120	July 24, 1961
3661	0284	92,500	1	400	80	Aug. 21, 1961
3661	0284	92,500	1	600	120	Do.
3661	0284	92,500	1	600	120	Sept. 18, 1961
3661	0284	92,500	1	600	120	Oct. 16, 1961
3661	0284	92,500	1	600	120	Nov. 13, 1961
3661	0284	92,500	1	400	80	Mar. 7, 1961
3631	0000	92,500			20	Do.
3661	0315	92,500	1	500	15	Jan. 13, 1961
3631	0000	92,500			20	Feb. 17, 1961
3661	0315	92,500	1	500	15	Mar. 24, 1961
3631	0000	92,500			20	Do.
3631	0000	92,500			20	July 7, 1961
3631	0000	92,500			20	Aug. 11, 1961
3631	0000	92,500			20	Sept. 15, 1961
3631	0000	92,500			20	Oct. 20, 1961
3631	0000	92,500			20	Nov. 16, 1961
3631	0000	92,500			20	Nov. 24, 1961
3661	0314	92,500	1	5,000	250	Nov. 16, 1961
3661	0315	92,500	1	500	15	July 7, 1961
3661	0315	92,500	1	500	15	Aug. 11, 1961
3661	0315	92,500	1	500	15	Sept. 15, 1961
3661	0315	92,500	1	500	15	Oct. 20, 1961
3661	0315	92,500	1	500	15	Nov. 24, 1961
3631	0000	92,500			20	June 2, 1961
3661	0315	92,500	1	500	15	Feb. 17, 1961
3661	0315	92,500	1	500	15	Apr. 26, 1961
3631	0000	92,500			20	June 23, 1961
3631	0000	92,500			20	Apr. 27, 1961
3631	0000	92,500			20	July 28, 1961
3631	0000	92,500			100	July 5, 1961
3631	0000	92,500			20	July 7, 1961
3631	0000	92,500			20	Oct. 10, 1961
3659	0193	92,500	5	5,000	630	July 5, 1961
3659	0203	92,500			20	Do.
3661	0314	92,500	1	5,000	250	July 23, 1961
3661	0315	92,500	1	1,000	30	July 7, 1961
3661	0315	92,500	1	1,000	30	Oct. 10, 1961
3661	0315	92,500	1	500	15	May 3, 1961
3661	0314	92,500	1	2,000	100	June 23, 1961
3631	0000	92,500			20	May 3, 1961
3661	0315	92,500	1	500	15	Apr. 27, 1961
3631	0000	92,500			20	Apr. 28, 1961
3661	0315	92,500	1	500	15	June 2, 1961
3631	0000	92,500			20	Jan. 13, 1961
3661	0315	92,500	1	500	15	Dec. 7, 1962
3631	0000	92,500			20	Do.
3661	0000	92,500			20	Nov. 12, 1962
3661	0284	92,500	1	600	120	Do.
3661	0315	92,500	1	500	15	Nov. 9, 1962
3631	0000	92,500			20	Do.
3661	0314	92,500	1	10,000	500	Nov. 20, 1962
3661	0314	92,500	1	1,000	50	Nov. 29, 1962
3661	0315	92,500	1	1,000	30	Do.

Account	Sub.	Cust.	Number of shipments	Quantity	Value	Date
3631	0000	92,500			20	Nov. 20, 1962
3631	0000	92,500			20	Nov. 29, 1962
3631	0000	92,500			20	Do.
3631	0000	92,500			20	Oct. 3, 1962
3631	0000	92,500			20	Oct. 9, 1962
3661	0315	92,500	1	500	15	Oct. 5, 1962
3631	0000	92,500			20	Do.
3661	0314	92,500	1	10,000	500	Oct. 3, 1962
3661	0315	92,500	1	1,000	30	Oct. 9, 1962
3631	0000	92,500			20	Sept. 17, 1962
3631	0000	92,500			20	Sept. 26, 1962
3661	0284	92,500	1	600	120	Sept. 17, 1962
3661	0284	92,500	1	600	120	Sept. 26, 1962
3661	0315	92,500	1	500	15	July 27, 1962
3631	0000	92,500			20	Do.
3631	0000	92,500			20	Aug. 20, 1962
3661	0284	92,500	1	600	120	Do.
3661	0284	92,500	1	600	120	Aug. 31, 1962
3661	0315	92,500	1	500	15	Do.
3631	0000	92,500			20	Do.
3661	0315	92,500	1	1,000	30	Aug. 1, 1962
3661	0315	92,500	1	1,000	30	Aug. 22, 1962
3631	0000	92,500			20	Do.
3631	0000	92,500			20	Aug. 1, 1962
3631	0000	92,500			20	Aug. 31, 1962
3631	0000	92,500			20	July 10, 1963
3631	0000	92,500			20	July 19, 1963
3631	0000	92,500			20	July 22, 1963
3661	0315	92,500	1	1,000	30	July 10, 1963
3661	0315	92,500	1	1,000	30	July 19, 1963
3661	0284	92,500	1	800	160	July 22, 1963
3631	0000	92,500			20	Aug. 14, 1963
3631	0000	92,500			20	Aug. 16, 1963
3631	0000	92,500			20	Aug. 19, 1963
3631	0000	92,500			20	Aug. 28, 1963
3661	0284	92,500	1	400	80	Aug. 19, 1963
3661	0314	92,500	1	11,000	275	Aug. 14, 1963
3661	0315	92,500	1	1,000	30	Aug. 16, 1963
3661	0315	92,500	1	1,000	30	Aug. 28, 1963
3661	0315	92,500	1	1,000	30	Sept. 13, 1963
3661	0284	92,500	1	400	80	Sept. 16, 1963
3631	0000	92,500			20	Sept. 13, 1963
3631	0000	92,500			20	Sept. 16, 1963
3661	0315	92,500	1	1,000	30	Oct. 11, 1963
3631	0000	92,500			20	Do.
3631	0000	92,500			20	Oct. 14, 1963
3661	0284	92,500	1	400	80	Do.
3631	0000	92,500			20	Nov. 8, 1963
3631	0000	92,500			20	Nov. 11, 1963
3661	0284	92,500	1	400	80	Do.
3661	0315	92,500	1	1,000	30	Nov. 8, 1963
3661	0284	92,500	1	400	80	Dec. 9, 1963
3661	0315	92,500	1	1,000	30	Dec. 6, 1963
3631	0000	92,500			20	Do.
3631	0000	92,500			20	Dec. 9, 1963
3661	0315	92,500	1	1,000	30	June 21, 1963
3661	0314	92,500	1	11,000	275	June 17, 1963
3661	0284	92,500	1	800	160	June 24, 1963
3631	0000	92,500			20	June 21, 1963
3631	0000	92,500			20	June 24, 1963
3631	0000	92,500			20	June 17, 1963
3661	0315	92,500	1	1,000	30	Apr. 26, 1963
3658	0191	92,500	1	1,000	45	Apr. 3, 1963
3658	0193	92,500	4	4,000	360	Apr. 4, 1963
3661	0284	92,500	1	800	160	Apr. 1, 1963
3661	0284	92,500		200	40	Do.
3661	0284	92,500	1	800	160	Apr. 29, 1963
3631	0000	92,500			20	Apr. 26, 1963
3659	0203	92,500			10	Apr. 4, 1963
3631	0000	92,500			20	Apr. 1, 1963
3631	0000	92,500			20	Apr. 29, 1963
3631	0000	92,500			20	Apr. 3, 1963
3631	0000	92,500			60	Apr. 4, 1963
3661	0315	92,500	1	500	15	Mar. 8, 1963
3661	0315	92,500	1	500	15	Mar. 29, 1963
3661	0315	92,500	1	1,000	30	Mar. 20, 1963
3661	0315	92,500	1	500	15	Mar. 27, 1963
3631	0000	92,500			20	Mar. 8, 1963
3631	0000	92,500			20	Mar. 29, 1963
3631	0000	92,500			20	Mar. 20, 1963
3631	0000	92,500			20	Mar. 27, 1963
3661	0315	92,500	1	500	15	Feb. 1, 1963
3661	0284	92,500	1	800	160	Feb. 11, 1963
3631	0000	92,500			20	Feb. 1, 1963

Account	Sub.	Cust.	Number of shipments	Quantity	Value	Date
3631	0000	92,500			20	Feb. 11, 1963
3661	0315	92,500	1	500	15	Jan. 4, 1963
3661	0284	92,500	1	800	160	Jan. 7, 1963
3661	0315	92,500	1	1,000	30	Jan. 25, 1963
3631	0000	92,500			20	Jan. 4, 1963
3631	0000	92,500			20	Jan. 7, 1963
3631	0000	92,500			20	Jan. 25, 1963
3661	0314	92,500	1	10,000	500	May 9, 1963
3661	0315	92,500	1	1,000	30	May 24, 1963
3661	0315	92,500	1	1,000	30	May 2, 1963
3661	0284	92,500	1	800	160	May 27, 1963
3631	0000	92,500			20	May 9, 1963
3631	0000	92,500			20	May 24, 1963
3631	0000	92,500			20	May 2, 1963
3631	0000	92,500			20	May 27, 1963
3631	0000	92,500			20	Oct. 9, 1964
3661	0315	92,500	1	1,000	30	Do.
3631	0000	92,500			20	Sept. 11, 1964
3631	0000	92,500			20	Sept. 14, 1964
3631	0000	92,500			180	Sept. 15, 1964
3658	0193	92,500	3	3,000	270	Do.
3661	0284	92,500	1	150	30	Sept. 14, 1964
3661	0315	92,500	1	1,000	30	Sept. 11, 1964
3631	0000	92,500			20	Aug. 14, 1964
3631	0000	92,500			20	Aug. 17, 1964
3631	0000	92,500			20	Aug. 31, 1964
3661	0284	92,500	1	150	30	Aug. 17, 1964
3661	0284	92,500	1	150	30	Aug. 31, 1964
3661	0315	92,500	1	1,000	30	Aug. 14, 1964
3661	0284	92,500	1	400	80	July 20, 1964
3661	0315	92,500	1	1,000	30	July 17, 1964
3631	0000	92,500			20	Do.
3631	0000	92,500			20	July 20, 1964
3631	0000	92,500			20	Jan. 3, 1964
3631	0000	92,500			20	Jan. 31, 1964
3661	0315	92,500	1	1,000	30	Jan. 3, 1964
3661	0315	92,500	1	1,000	30	Jan. 31, 1964
3631	0000	92,500			20	Feb. 3, 1964
3631	0000	92,500			20	Feb. 28, 1964
3661	0284	92,500	1	400	80	Feb. 3, 1964
3661	0315	92,500	1	1,000	30	Feb. 28, 1964
3631	0000	92,500			20	May 22, 1964
3631	0000	92,500			20	Do.
3631	0000	92,500			20	May 25, 1964
3661	0284	92,500	1	400	80	May 22, 1964
3661	0284	92,500	1	400	80	May 25, 1964
3661	0315	92,500	1	1,000	30	May 22, 1964
3631	0000	92,500			20	Mar. 2, 1964
3631	0000	92,500			20	Mar. 27, 1964
3631	0000	92,500			20	Mar. 30, 1964
3661	0284	92,500	1	400	80	Mar. 2, 1964
3661	0284	92,500	1	400	80	Mar. 30, 1964
3661	0315	92,500	1	1,000	30	Mar. 27, 1964
3631	0000	92,500			20	Apr. 24, 1964
3631	0000	92,500			20	Apr. 27, 1964
3661	0284	92,500	1	400	80	Do.
3661	0315	92,500	1	1,000	30	Apr. 24, 1964
3661	0315	92,500	1	1,000	30	June 19, 1964
3631	0000	92,500			20	Do.
3631	0000	92,500			20	June 22, 1964
3661	0284	92,500	1	400	80	Do.
3631	0000	92,500			20	Dec. 4, 1964
3661	0315	92,500	1	1,000	30	Do.
3631	0000	92,500			20	Nov. 6, 1964
3661	0315	92,500	1	1,000	30	Do.
3631	0000	92,500			25	Aug. 6, 1965
3631	0000	92,500			25	Aug. 13, 1965
3661	0315	92,500	1	1,000	30	Aug. 6, 1965
3661	0315	92,500	1	1,000	30	Aug. 13, 1965
3631	0000	92,500			25	Sept. 9, 1965
3631	0000	92,500			25	Sept. 10, 1965
3631	0000	92,500			120	Sept. 20, 1965
3658	0193	92,500	2	2,000	210	Do.
3661	0314	92,500	1	5,000	250	Sept. 9, 1965
3661	0315	92,500	1	1,000	30	Sept. 10, 1965
3631	0000	92,500			25	Oct. 8, 1965
3661	0315	92,500	1	1,000	30	Do.
3631	0000	92,500			25	Nov. 5, 1965
3661	0315	92,500	1	1,000	30	Do.
3631	0000	92,500			25	Dec. 31, 1965
3631	0000	92,500			25	Dec. 3, 1965
3661	0315	92,500	1	1,000	30	Dec. 31, 1965
3661	0315	92,500	1	1,000	30	Dec. 3, 1965
3631	0000	92,500			20	Jan. 1, 1965

Account	Sub.	Cust.	Number of shipments	Quantity	Value	Date
3631	0000	92,500			20	Jan. 29, 1965
3661	0315	92,500	1	1,000	30	Jan. 1, 1965
3631	0315	92,500	1	1,000	30	Jan. 29, 1965
3631	0000	92,500			20	Feb. 1, 1965
63q1	0000	92,500			20	Feb. 15, 1965
3631	0000	92,500			20	Feb. 26, 1965
3661	0284	92,500	1	150	30	Feb. 1, 1965
3661	0284	92,500	1	150	30	Feb. 15, 1965
3661	0315	92,500	1	1,000	30	Feb. 26, 1965
3631	0000	92,500			20	Mar. 1, 1965
3631	0000	92,500			20	Mar. 22, 1965
3631	0000	92,500			20	Mar. 26, 1965
3661	0284	92,500	1	150	30	Mar. 1, 1965
3661	0284	92,500	1	150	30	Mar. 22, 1965
3661	0315	92,500	1	1,000	30	Mar. 26, 1965
3661	0315	92,500	1	1,000	30	Apr. 23, 1965
3631	0000	92,500			20	Do.
3661	0315	92,500	1	1,000	30	May 21, 1965
3631	0000	92,500			25	Do.
3631	0000	92,500			25	June 18, 1965
3661	0315	92,500	1	1,000	30	Do.
3661	0315	92,500	1	1,000	30	Do.
3631	0000	92,500			25	Do.
3631	0000	92,500			25	Jan. 24, 1966
3631	0000	92,500			25	Jan. 28, 1966
3661	0315	92,500	1	1,000	30	Do.
3654	0108	92,500	1	1,000	25	Jan. 24, 1966
3631	0000	92,500			25	Feb. 25, 1966
3661	0315	92,500	1	1,000	30	Do.
3631	0000	92,500			25	Mar. 25, 1966
3631	0000	92,500			25	Mar. 28, 1966
3661	0314	92,500	1	5,000	250	Do.
3661	0315	92,500	1	1,000	30	Mar. 25, 1966
3661	0315	92,500	1	1,000	30	Apr. 22, 1966
3631	0000	92,500			25	Do.
3631	0000	92,500			25	May 20, 1966
3661	0315	92,500	1	1,000	30	Do.
Total			188	247,050	16,886	
3631	0000	92,514			60	Jan. 21, 1969
3661	0305	92,514	1	100,000	380	Do.
3631	0000	92,514			60	Feb. 4, 1969
3631	0000	92,514			60	Feb. 24, 1969
3661	0305	92,514	1	100,000	380	Feb. 4, 1969
3661	0305	92,514	1	800,000	3,040	Feb. 24, 1969
Total			3	1,000,000	3,980	
Grand total			191	1,247,050	20,866	

Mr. DIGGS. Do we still have personnel stationed there to buy, for example, uranium oxide?

Mr. FLAHERTY. No, sir; we no longer buy uranium from South Africa. We had one metallurgist there who was essentially a quality control man but he left there in 1966.

Mr. DIGGS. Was that about when you started phasing out your purchasing of uranium?

Mr. FLAHERTY. That is exactly so. We purchased uranium between 1952 and 1966. In the meantime, two things happened. There were large discoveries of uranium in the United States so that we no longer needed to depend on foreign supply, and our requirements went down because the weapons program was cut back.

Mr. DIGGS. Of course, we still disseminate a substantial amount of information on this field.

Mr. FLAHERTY. In the atomic energy field, yes, sir. Since President Eisenhower's Atoms for Peace program was established in 1954, the United States has disseminated unclassified information on atomic energy on a worldwide basis.

Mr. DIGGS. Now, South Africa does have a scientific mission in this country. This is listed in the book at 3051 Massachusetts Avenue. Is this the agency you deal with on a liaison, a cooperative basis for dissemination of information, or for any other purpose?

Mr. FLAHERTY. Our principal method for dissemination of information is that which I mentioned in my statement, that is we do supply published atomic energy information to South African libraries on a full cost recovery basis.

The second most important mechanism would be through the scientists who are currently at work in AEC facilities.

We do have, of course, contact with the South African Embassy here. There is a member of the staff who specializes in scientific matters, including atomic energy, and we see him from time to time, primarily in connection with arranging visits and things of this kind.

Mr. DIGGS. But this office on Massachusetts Avenue you have just described the extent of your contact with it. Are you aware of any other agency, or the nature of this commission, or a mission, rather, that they have?

Mr. FLAHERTY. No, sir; I personally am not.

Mr. DIGGS. And the gentleman on the embassy staff—

Mr. FLAHERTY. Mr. Shuttleworth.

Mr. DIGGS. That is to facilitate visits. Is he a scientist himself?

Mr. FLAHERTY. I believe he is a scientist. He is called Dr. Shuttleworth.

Mr. DIGGS. Do we have any counterpart in our Embassy over in Pretoria?

Mr. FLAHERTY. No, sir; we do not. The Atomic Energy Commission, however, maintains, specific atomic energy science officers in Brussels, Paris, London, Tokyo, and Rio de Janeiro. These are the only ones that the USAEC has abroad.

Mr. DIGGS. Could you tell us something about scientific instrumentation? We talked about equipment earlier. I am interested in knowing a little more about that, and also scientific supplies through universities, scientific societies, or companies such as Cal Tech or Case Western, or MIT, and their atom-smashing machinery, including cyclotrons, accelerators and high voltage generators.

Don't they get a lot of this through us?

Mr. FLAHERTY. I am not aware of any program of the Atomic Energy Commission to supply such equipment. On the other hand, such equipment is readily available on the market.

Mr. DIGGS. You are not aware of any of these universities or companies that might be supplying this? They don't have to go through you, clear through you, you don't have to know about it all?

Mr. FLAHERTY. No, sir; we do not. Again, as I mentioned, we supplied equipment of this kind for the neutrino project in the deep mine. However, we are returning this equipment to the United States now that it has served its purpose, except for those things which we feel can be economically abandoned in place.

Mr. DIGGS. What about special types of steels, heat-resistant steel?

Mr. FLAHERTY. These items are not under the control of the Atomic Energy Commission. I will undertake, Mr. Chairman, as a result of this line of questioning, I will have our export control branch audit our

records, but I am not aware of items other than the ones I mentioned in connection with the export of the reactor.

It is possible there have been other small shipments, and if they exist I will certainly so advise the committee.

(The information referred to follows:)

The Department of Commerce requests the advice of the Atomic Energy Commission regarding license applications for the export of atomic energy related items. In the case of South Africa, there have been very few exports (approximately 10 per year) referred to the AEC. These have consisted of non-strategic items such as spare parts for a research reactor.

Mr. DIGGS. That is the only way the committee can fully understand the interrelation. Of course, you had a 3-page statement here which, on the surface, would indicate that our involvement with the development of South African atomic energy is rather minimal, but when you actually get into this thing you find that it is much more extensive than may have been implied.

Mr. FLAHERTY. There was certainly no intention to give that impression.

Mr. DIGGS. No. I just want to let you know I find it—you know, we are involved and we don't know we are involved. I can remember the Export-Import Bank people came up before us and said, "Well, we just have a few million dollars worth of dealings with Africa." When we went through the questions, I think it was revealing to them how much was involved in South Africa.

I am sure you have been very candid and have been very cooperative, and we don't mean to suggest that the brevity of your statement reflected any reluctance.

Mr. FLAHERTY. Mr. Chairman, I want to make it very clear, that we in the Commission, deplore the racial policy of South Africa and the attitude of that Government in this regard. We in no way condone apartheid.

I want to make this very clear. We have, however, conducted our affairs in the Atoms for Peace program with South Africa as we have with other nations. There has not been anything special about the relationships. We treated South Africa just as we have other nations.

Our relationships have not been as extensive with South Africa as they have been with many other countries from our view, they have been minimal.

I also appreciate your observation that once you start going into all the details it does appear as if they have been considerable.

Mr. DIGGS. This projected reactor near Cape Town, could you tell us a little more about that?

Mr. FLAHERTY. Yes, sir.

Mr. DIGGS. How we may be involved in it.

Mr. FLAHERTY. Yes; I can certainly explain that. The South Africans are going to ask for tenders for this reactor, within a very short time, I suspect within just a few months.

They have already sent out advance notice to manufacturers throughout the world of this intention. I would expect that the reactor manufacturers in the United States, that is General Electric, Westinghouse, Combustion Engineering, Babcock & Wilcox, and perhaps the Gulf Atomic Corp., would be companies qualified to enter bids on this project. I believe South Africa also may receive bids on this reactor

from Canada, the United Kingdom, Germany, and perhaps France. These are the countries which I would consider to be qualified to submit tenders.

The South Africans have indicated to us that if they select a reactor involving a requirement for enriched uranium, they will come to us for the fuel supply, and we would then enter into negotiations for the supply of the enriched uranium fuel.

Mr. DIGGS. What kind of guarantee do you actually have that a nuclear power reactor would be used for peaceful purposes?

Mr. FLAHERTY. We have among ourselves, South Africa and the International Atomic Energy Agency, which is an agency organized under the aegis of the U.N., an agreement providing for the application of nuclear safeguards to any reactor or any special nuclear material which we supply. This means that South Africa must make their project available for inspection, audit, and control by inspectors of the International Atomic Energy Agency.

The U.S. Government is satisfied that the controls exercised by the Agency are adequate to insure that these machines and materials are used only for peaceful purposes.

Mr. DIGGS. I yield to counsel at this point for further questioning.

Mrs. BUTCHER. If any of the American companies were to submit tenders for the reactor, would any Export-Import financing be involved?

Mr. FLAHERTY. I do not know whether South Africa would apply for Export-Import support or not.

Mrs. BUTCHER. At the beginning of the questioning, you gave the figures for our supply to South Africa of uranium. Were those the total figures, or just for 1971?

Mr. FLAHERTY. Those were the total figures.

Mrs. BUTCHER. What contracts do we have now with South Africa for supplying uranium. Have all those been phased out?

Mr. FLAHERTY. These have all been phased out.

Mrs. BUTCHER. These are public documents and could be supplied to the subcommittee?

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. You have the figures for the total tonnage of ore.

Mr. FLAHERTY. That we have purchased?

Mrs. BUTCHER. Yes.

Mr. FLAHERTY. We purchased approximately 43,000 tons of uranium concentrate over the period we were involved.

Mrs. BUTCHER. Did we pay for this in foreign exchange?

Mr. FLAHERTY. Yes; we did. Approximately slightly less than a billion dollars would be the value of those purchases.

Mrs. BUTCHER. How much?

Mr. FLAHERTY. About a billion dollars.

Mrs. BUTCHER. For what period?

Mr. FLAHERTY. That covered the period 1952 to 1966.

Mrs. BUTCHER. Is it true that South Africa has been stockpiling uranium since we slowed down in our purchases?

Mr. FLAHERTY. While I don't have detailed knowledge, let me say that they have been. Every nation in the world now has excess stockpiles of uranium. If I may say so, it is a drug on the market at the moment.

The U.S. Atomic Energy Commission, for example has the equivalent of 50,000 tons of uranium which we are planning to sell eventually, and I am sure that South Africa has large stockpiles of uranium. I know that France does. I think almost every nation does at the moment.

Mrs. BUTCHER. You mentioned three European countries which have banded together to try to develop the centrifuge process. South Africa is also trying to develop it, and plans, according to Vorster, to have a huge foreign exchange earner thereby.

Suppose the European countries make this breakthrough also, which South Africa has claimed to make. What would that mean economically, both to South Africa and then, second, what would it mean to us?

Mr. FLAHERTY. Well, I like to think that U.S. technology is as good as that of others. On the other hand, in terms of what it means to us, it is my belief that we will still be able to compete worldwide in this field.

However, if certain countries were to achieve some of the glowing claims I have heard, it would mean that very likely we would lose these foreign markets.

Mrs. BUTCHER. Is there a possibility that we might even decide not to operate our gaseous diffusion plants and perhaps let some of those matters go?

Mr. FLAHERTY. I certainly hope not. The Atomic Energy Commission and the administration have announced that we stand ready to supply the free world's needs for enriched uranium until at least 1980.

We think that inevitably other countries will eventually develop their own processes. No nation is satisfied to have to depend on someone else entirely for anything as vital as its electricity supply. So I think our attitude is that inevitably these other countries will develop their own enrichment processes.

But at least until 1980, we feel we can supply the market. The administration has committed funds to upgrade our facilities and we will be right in there competing.

Mrs. BUTCHER. I understand there is an interrelationship between a country's electricity supply and its ability to have an enrichment process.

Mr. FLAHERTY. This is quite true. The enrichment process is a very large user of electricity.

Mrs. BUTCHER. In your statement, you say that the new reactor which will be built at Cape Town will supply the South Africa Electricity Commission with electricity.

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. Does that mean we will be doing, more or less indirectly, what needs to be done to give South Africa the electricity to use in developing the enrichment facility?

Mr. FLAHERTY. As I say, if one of the U.S. reactor suppliers were to win the bid over a Canadian or European company, we would be contributing the capacity of 600 million kilowatts of electricity to South Africa. This, by the way, would not provide for a very large gaseous diffusion plant.

Mrs. BUTCHER. What about a centrifuge plant?

Mr. FLAHERTY. The centrifuge, if it is developed, is supposed to be a much more efficient user of electricity. Again, 600 megawatts is not a large quantity of electricity.

The average plants built in the United States today are on the order of 1,000 electrical megawatts.

Mrs. BUTCHER. In connection with the university project such as the Case Western Research and California projects, were any black personnel assigned to South Africa?

I think you said there were 25 scientists.

Mr. FLAHERTY. None of them were black.

Mrs. BUTCHER. Did we have contracts with any of these universities?

Mr. FLAHERTY. We had contracts with the University of California and Case Institute.

Mrs. BUTCHER. Did those contracts contain a standard nondiscriminatory clause?

Mr. FLAHERTY. Yes, they did.

Mrs. BUTCHER. Can you comment, then, on why no black person was assigned?

Mr. FLAHERTY. Of the 25 scientists assigned to this program, none were black. I am not aware of any case of discrimination in the university or at Case Institute, at the time. But it is a fact that none of the personnel assigned to the South African project were black.

Mrs. BUTCHER. Were there clerical and other personnel as well as professional personnel?

Mr. FLAHERTY. I think these were entirely scientific personnel. There were 12 scientists assigned to the project, not 25.

Mrs. BUTCHER. Does the South African AEC cooperate with the government in the production of military weapons?

Mr. FLAHERTY. I do not know.

Mrs. BUTCHER. What about the Council for Scientific Research CSIR?

Mr. FLAHERTY. I do not know.

Mrs. BUTCHER. But the United States does not have any relationships with that Council?

Mr. FLAHERTY. No. The USAEC does not have any relationship with the CSIR. However several of the visitors from South Africa have been affiliated with the CSIR.

Mrs. BUTCHER. What cooperation is there with South Africa with regard to the Plowshare program?

Mr. FLAHERTY. None.

Mrs. BUTCHER. Do we have scientific cooperation in South Africa in the following fields: physics?

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. Chemistry?

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. Biology?

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. And you already said medical research?

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. Metallurgical?

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. What about computers, and information retrieval?

Mr. FLAHERTY. I am not aware of any programs of this type. When we supply the committee with the additional South African scientists for years other than 1971 and their specialities, I think this will provide the answers to your question, regarding their fields of specialization.

Mrs. BUTCHER. You will note that?

Mr. FLAHERTY. Yes. In supplying the names to the committee, we will note the name of the individual, where he was located and his field of specialization.

Mrs. BUTCHER. That will be a total list?

Mr. FLAHERTY. Yes; it will be a total list.

Mrs. BUTCHER. How about in desalting?

Mr. FLAHERTY. We have no program in connection with desalting with South Africa. I want to refer again to the fact that we do distribute to them on a routine basis unclassified reports of our work and some of those reports are on desalting, so this kind of information would be in their library, but we have no specific program.

Mrs. BUTCHER. What about in the field of reactor development?

Mr. FLAHERTY. We do supply routinely South Africa, as well as any other nation, with our unclassified reports that are available. Specifically the research reactors, from Allis Chalmers, and the materials which we supplied for the critical assembly are the key to reactor development. We certainly have assisted them in this sense in reactor development.

Mrs. BUTCHER. Was the U.S. Government financing the Allis Chalmers contract?

Mr. FLAHERTY. I doubt it. Again, we can go back, and obtain the answers to that question.

(The information referred to follows:)

The U.S. Government did not finance this Allis-Chalmers reactor sale to South Africa.

Mrs. BUTCHER. Have we been cooperating with them in the field of reactors for Navy ships, or military reactors, army reactors?

Mr. FLAHERTY. No.

Mrs. BUTCHER. Is there any cooperation in South Africa between NASA and the AEC and the South African AEC?

Mr. FLAHERTY. No.

Mrs. BUTCHER. You have mentioned the library facilities which we make available to them. Are there any restrictions on that, or are they across the board?

Mr. FLAHERTY. Unclassified information is made available throughout the world.

Mrs. BUTCHER. Free of charge?

Mr. FLAHERTY. No longer. I mentioned in my statement that we supplied unclassified information free of charge until 1969. Since then it has been on a basis of recovering our costs.

Mrs. BUTCHER. What about film loans?

Mr. FLAHERTY. We do have films for loan, and if they have applied for them, I am sure they have gotten them. Let us say they are available. I don't know whether there have been transactions or not.

Mrs. BUTCHER. Is there cooperation with regard to regular isotopes?

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. The United States has stated in a pamphlet that one of the uses of radioisotopes is national defense. Would our cooperation extend to this?

Mr. FLAHERTY. I am not aware of that reference. Which pamphlet is that which you refer to?

Mrs. BUTCHER. I don't remember which one it was.

Mr. FLAHERTY. I am not aware of this. We have disseminated information on civilian defense quite freely in our literature, but I do not believe we have a program specifically for civilian defense with South Africa.

Mrs. BUTCHER. Could you check on that?

Mr. FLAHERTY. Yes.

(The information referred to follows:)

The USAEC has no civil defense agreement with South Africa nor are we aware of any such agreement with any Agency of the U.S. Government.

Mrs. BUTCHER. What educational and scientific training programs are available to South African scientists?

Mr. FLAHERTY. The only programs that I am aware of that are now available are scientific visits and assignments to our institutions. We occasionally have symposia on specific subjects at which there is worldwide attendance.

We did at one time operate a reactor training school at Oak Ridge. We did at one time have a training program specifically for foreign nationals at Argonne Laboratory.

However, these programs were phased out several years ago because atomic energy has become more and more a commercial business, and these activities now tend to be handled more like any other activity, so the Commission no longer conducts these schools.

Mrs. BUTCHER. May we have data on the South African participation in those programs?

Mr. FLAHERTY. Yes; both at Argonne and at Oak Ridge. I am sure there must have been attendance at these.¹

Mrs. BUTCHER. I understand that there have been South African scientists such as Dr. Jordan and who have been facilitated in their postdoctorate studies at various U.S. nuclear institutions and universities such as California. Do you have any explanation on that?

Mr. FLAHERTY. I am certain that this is true. I did mention the people who are currently participating in this area, and I have agreed to supply the subcommittee with the complete lists, and they will be included on those lists.

Mrs. BUTCHER. Has the United States participated in the international conferences, or any conferences in South Africa on atomic energy and related subjects?

Mr. FLAHERTY. I don't know. I would be surprised if we had. We will undertake to check it. I don't think South Africa has been a very popular location for international conferences.

There has been no USAEC participation in international conferences or conferences in South Africa on atomic energy and related subjects that we have been able to identify.

¹ See items 9, 10, 12, 15, 17, 22, 25, 27, 29, 35, 36, 52, 56 and 70 of material supplied in response to question raised which appears on pp. 47, 48.

Mrs. BUTCHER. Have we participated in exhibitions?

Mr. FLAHERTY. Again, I will have to check our records on that.

(The information referred to follows:)

There has been no USAEC participation in exhibits in South Africa.

Mrs. BUTCHER. Is it correct that we have a research and power agreement with South Africa?

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. What does this mean?

Mr. FLAHERTY. What it means primarily is that we are permitted to supply specified amounts of special nuclear materials for research reactors and power reactors. We have supplied to the committee the specific documents.

Mrs. BUTCHER. Do we have a technical exchange agreement with South Africa?

Mr. FLAHERTY. We do not have.

Mrs. BUTCHER. Do we have any laboratory-to-laboratory arrangements with South African facilities?

Mr. FLAHERTY. No.

Mrs. BUTCHER. Is one of our responsibilities under our bilateral to see that the uranium which we supply is not diverted to nonpeaceful uses?

Mr. FLAHERTY. Yes, we provided for this in the trilateral agreement which I mentioned among ourselves, the South Africans, and the International Atomic Energy Commission.

Mrs. BUTCHER. This inspection is performed regularly?

Mr. FLAHERTY. Yes.

Mrs. BUTCHER. Will South Africa become a party to the NPT, the Nonproliferation Treaty?

Mr. FLAHERTY. I don't know whether they will sign the NPT or not. I have no information as to what their intentions are.

Mrs. BUTCHER. When was the NPT opened up for signature?

Mr. FLAHERTY. July 1968.

Mrs. BUTCHER. Has it been a matter of concern that South Africa has not acceded to this treaty?

Mr. FLAHERTY. I think it is a matter of concern to the United States that there are 32 nations in the world who have not so far signed the agreement. There are another 33 who have signed it and not ratified it. Certainly, this is a matter of concern to us, and we very much hope that all nations will eventually subscribe. I think this is very, very much in our interest.

Mr. DIGGS. Are any of these nations that have not signed or not ratified nations with whom we have this kind of cooperation in the field?

Mr. FLAHERTY. Yes. I might, if you wish, enter them for the record.

Albania, Algeria, Argentina, Bolivia, Brazil, Burma, Chile, China, Cuba, France, Gabon, India, Israel, the Khmer Republic, Liberia, Lichtenstein, Madagascar, Malawi, Monaco, Niger, Pakistan, Portugal, Rhodesia, Saudi Arabia, Sierra Leone, South Africa, Spain, Thailand, Uganda, Zambia, Byelorussia, and Ukraine.

These are the nations that have not yet signed the NPT. I would certainly say it is the hope, and I believe also I can say the anticipation of the United States that all nations will do so.

Mr. DIGGS. Many of the nations you just read off there will have no kind of atomic energy program. The significance of Gabon and Sierra Leone—

Mr. FLAHERTY. I would agree they would fall into different classes. France, of course, is another matter. There are both kinds of nations on the list, those who are apt to have large programs and those who are apt not to.

I was simply trying to give a complete answer to the question.

Mr. DIGGS. How would you describe the overall rationale and objective of U.S. involvement with South Africa in the nuclear field? What is in it for us?

Mr. FLAHERTY. I would like to discuss this under two headings.

First, there has been the basic Atoms for Peace program in which we have tried to make certain that the benefits of atomic energy were brought to everyone in the world under conditions which we felt would at the same time prohibit the proliferation of weapons capability. I think that this is the philosophical cornerstone of our program.

Additionally, of course, we could not overlook the commercial implications. I think I mentioned some numbers that we see, and that are possible in the sale of reactor equipment and enrichment services, and we do expect atomic energy to be one of the largest earners of dollar exchange.

I mentioned just enrichment services which, of course, are performed directly by the Government. I did not mention the overall numbers that we see for exports of reactors.

We feel that the export reactors of the U.S. type by 1985 will involve a total of about \$80 billion.

At least \$30 billion of this probably will be items directly exportable from the United States. The balance will be local costs, which in many cases, involve some return to the United States because U.S. companies are involved in the program.

So I think that these are the two principal rationales we see for the whole program, Mr. Chairman.

Mr. DIGGS. It is interesting that the Department of Commerce as a matter of policy commits the U.S. Government to a policy of not encouraging or discouraging U.S. business involvement in South Africa, and of course the story that we have heard here today—principally brought out through the questions—certainly by no stretch of the imagination would reflect any discouragement. And as we characterize this mission—the nature of the mission as being really commercial now—this certainly is the greatest amount of encouragement that I have seen.

It certainly does not reflect what the Commerce Department is saying.

So, apparently, the Commerce Department guidelines don't necessarily reflect the policies of AEC as they relate to South Africa.

Mr. FLAHERTY. Mr. Chairman, we do, of course, operate under the policies of the U.S. Government. I feel that we are faithfully discharging the responsibilities placed on us by the Atomic Energy Act and by the Atoms for Peace program which has been placed in our charge, and we certainly abide by all of the Department of Commerce rules and regulations.

I would say that we are not discouraging the peaceful applications of atomic energy in South Africa. One of the purposes for involving ourselves in any nation's program, as I have indicated, is to try to make certain that the applications of atomic energy are for peaceful purposes and that safeguards are provided.

Mr. Diggs. Well, you have been very candid and very generous with your time, and we appreciate your enlightenment of the subcommittee, and look forward to the supplemental information that you will supply.

Mr. FLAHERTY. Thank you very much, Mr. Chairman.

Mr. Diggs. Miss Rogers.

Miss Rogers, might we begin your testimony by your reciting for the record a little something about your own background and how you become involved in southern Africa questions?

STATEMENT OF BARBARA ROGERS, FRIENDS OF NAMIBIA, ENGLAND

BIOGRAPHY

Graduated from the University of Sussex, England, in 1968 with a major in Russian; then entered the British Diplomatic Service. Worked at the Foreign and Commonwealth Office, London, on African questions, ending with the desk, "South West Africa (Namibia) and United Nations aspects of South Africa". Resigned, in June 1970, over South Africa's preferential economic ties with the United Kingdom.

Has since worked as a free-lance journalist and researcher, and for the Africa Bureau and War on Want. Visited South Africa and Namibia from June to August 1971. Now in New York to petition the United Nations on the question of Namibia.

MISS ROGERS. Well, Mr. Chairman, my interest in South Africa directly stems from studying the Soviet Union. I majored in Russian and I spent a year in Moscow, and as soon as I started to work on the African question, it seemed that there were many parallels on how they face the outside world. This doesn't mean that I am necessarily anti-Soviet, but I still think that, just as one is constructively critical about events in the Soviet Union, one is critical of what is happening in South Africa.

I worked in the Foreign and Commonwealth Office in London on African questions, primarily on South Africa and Namibia. I resigned on grounds of disagreement with economic policy toward South Africa, and since then I have been doing some free-lance journalism and research, and some work for the Africa Bureau in London, which is a research body on Africa.

I visited South Africa during the summer for 2 months, and in particular was interested in the kind of reaction inside Namibia to the International Court judgment on the consequences of the continuing South Africa occupation of the territory.

Mr. Diggs. You have a prepared statement, Miss Rogers. You may proceed.

MISS ROGERS. Thank you.

Mr. Chairman, I have been doing some research into British trade and investment in South Africa and Namibia, and the conclusions are to some extent relevant to the question of U.S. business involvement there.

The British case is distinct from that of any other country, because of South African dependence on British capital and the British market; any change in the terms of economic relations between the two countries would have a profound effect on South Africa. Over 30 percent of South Africa's exports go to Britain, while between 3 and 4 percent of Britain's exports go to South Africa. Almost two-thirds of the foreign investment in South Africa is British owned.

This dependence on the link with Britain is a major cause of concern among South African Government economists at the moment, since with Britain's entry into the European Common Market, South Africa will lose the concessions which she has enjoyed for so long. In particular, Commonwealth preference will be removed from South African exports to Britain; this will probably cut off at least 10 percent of South Africa's total exports, excluding gold. British investment in South Africa is also given uniquely favored terms, being exempt from exchange control regulations. This, too, is likely to be withdrawn with Britain's entry into Europe. Since the enlarged EEC accounts for over 50 percent of South Africa's exports, and the major part of its foreign investment, this trend is unfavorable to South African interests.

The prospect of South Africa having to struggle against shrinking export markets and perhaps dwindling foreign investment is of interest to U.S. business involved in South Africa and Namibia. Much of recent investment has been made on the assumption that the South African economy as a whole is exceptionally wealthy, is growing very fast, offers the highest returns on investment together with absolute security, and is invulnerable to outside pressure. This image has been very carefully built up by the South African information effort, together with South African business lobbies in which U.S. concerns are expected to participate.

The real picture is quite different. I do not intend to go into detail now about the problems of the South African economy, although I could elaborate on this if it would be useful. Briefly, South Africa faces a larger labor problem due to its apartheid labor policy. The shortage of skilled and semiskilled labor is acute, owing to the Government imposition of migratory labor pattern and a refusal to expand significantly education and training facilities for blacks. The growth rate is declining from between 6 and 7 percent per annum throughout the 1960's to about 4 percent in 1970, and perhaps 3 percent in 1971, according to projections. There is a very harsh credit squeeze, which among other things restricts the opportunity for local borrowing by U.S. firms to finance expansion. This is a case of direct support for South Africa's balance of payments at the expense of the U.S. balance of payments. Foreign investment that needs continual subsidies from home is not an asset. Further investment is continually forced on U.S. manufacturing concerns dealing with the South African market by means of protectionist import policies and local-content regulations.

The Johannesburg Stock Exchange is in a very low condition, having fallen further recently than during the Sharpeville panic of 1960-61. The trend in company profits also is not very promising. A rapidly increasing rate of inflation is threatening the basis of South African wealth, which is the gold-mining industry. Almost all the

premiums obtained from the increased price of gold on the free market have been swallowed up by increased costs.

The expected decline of gold production during the 1970's by almost 50 percent of present production is one of the basic causes for concern about South Africa's external economic relations. It makes South Africa vulnerable to fluctuations in trade levels, in particular to any decrease in the inflow of investment capital.

In 1970, South Africa's deficit on the balance of trade was R1,008 million, compared with R600.9 million in 1969; a deterioration of 67.8 percent. Gold sales brought in R800 million in foreign exchange, while invisibles probably cost R300 million. The deficit on current account was therefore about R500 million.

This deficit was enough to cut South Africa's gold and foreign exchange reserves in 1 year by well over half. The full effect of the deficit was cushioned only by the inflow of foreign capital, which in 1970 amounted to some R350 million—over half the balance-of-payments loss.

Without this inflow, South Africa would have been faced with a serious economic crisis.

Projections point to an increasing trade deficit. The obstacles raised by EEC enlargement will exacerbate the trend. It therefore seems that even with a constant level of foreign investment, the problem is likely to become increasingly serious. This in itself will presumably become evident even to U.S. investors; they would then modify their enthusiasm for South Africa only after the profitability of their South African interests had already fallen considerably. Since there is a harsh embargo on the repatriation of capital, however, the realization will have been too late.

My basic point does not relate to existing U.S. involvement in South Africa. It is that by actively encouraging large amounts of new investment, the United States and other governments are subsidizing a régime which cannot stand on its own feet. Even without the foreign exchange constraints, domestic capital formation in South Africa can sustain a growth rate of only 2 percent per annum. This would be sufficient to maintain the present régime in power, since it depends on a high and rapidly rising level of prosperity for the white electorate, and the avoidance of unemployment. To quote the Prime Minister himself, Mr. B. J. Vorster:

The greatest danger confronting South Africa is not so much the threat from outside her border, serious though that may be, but mass unemployment and disturbed race relations.

The real meaning of new U.S. investment in South Africa, therefore, is that it helps to maintain the illusion of a healthy economy, boosting business confidence around the world; it helps to fill the balance-of-payments gap that would otherwise force South Africa to change its economic structure radically; and it supplies foreign exchange for the whole expensive apartheid apparatus, including the propaganda drive, the attempt to dominate neighbouring African countries economically, and the purchase of arms and equipment for use against the blacks in South Africa, and for threatening black African countries. For example, there are the French cactus missiles bought in violation of a United Nations arms embargo which the United States observes.

The economic system in South Africa can be compared to the former southern U.S. economy, based on slavery. Basically, the profits can be high because the blacks concerned have no economic or political rights—no right to withdraw their labor, among other things. They do not even have elementary social rights, such as the rights to maintain a stable family life. The United States is now subsidizing this kind of economic system, which it has itself rejected during the Civil War.

The subsidies will perhaps dry up only when investors, and the Government which encourages and guarantees their investments, realize the economic problems which are arising out of the attempt to apply a system of slavery to a sophisticated modern economy. Research has shown that the slave trade was abolished in Britain only when a study was published showing that the system represented a net drain on the British economy.

What I should like to suggest is that commercial officials in U.S. Embassies and consulates in South Africa be withdrawn, or should stop actively encouraging U.S. investment there. The Export-Import Bank could stop giving assistance for companies dealing with South Africa. Official advice to any business inquiries should emphasize the difficulties in recovering any capital invested; the increasing economic problems facing South Africa, both domestically and externally; and the commitment to an alien economic and political system involved in new investment. There are many other ways and means open to the Government if it wishes to influence or control private investment in a foreign country. In an extreme case, such as Cuba, a complete break in economic relations can be imposed. If it is official policy to discourage the U.S. commitment anywhere, it can be enforced in spite of the complications. These are always exaggerated by those who basically want to see South Africa continue as at present, with the full support of all U.S. agencies.

The reason for avoiding an increased commitment to South Africa is, I think, fairly obvious. In the first place, Britain is an example of the embarrassment that results from complete economic involvement in southern Africa, and consequently political support for southern Africa against the force of world opinion, particularly from the Afro-Asian nations. For the United States, there is the additional risk that in the event of any outbreaks of violence in South Africa or Namibia, the Armed Forces could be drawn in, as in Vietnam. The prospect of U.S. troops fighting with the whites against the rights of the black majorities is not likely to promote peace in the ghettos, or improve race relations in the country as a whole.

For South Africa, then, I emphasize the question of new U.S. investment rather than what is already in South Africa, simply because the embargo on capital repatriation makes new investment the only practicable target. In the case of Namibia, however, the situation is quite different. The arguments that apply to the case are also different: they are legal, rather than economic or political.

The case of Namibia is basically very simple: South Africa is occupying it illegally, and the United Nations is trying to remove it.

To summarize the case up to now: the League of Nations gave South Africa a mandate to administer the territory of South-West Africa, replacing the German colonizers, after World War I. After World War II, South Africa maintained that the mandate had

lapsed with the dissolution of the League, and that she could rule there without interference; the United Nations, however, insisted that the mandate was still in force and obtained an opinion from the International Court of Justice in 1950 which supported this view.

After the failure of an attempt to obtain a binding decision from the Court in 1966, the General Assembly decided that the mandate had been terminated and that the territory therefore came under the direct authority of the United Nations. The United States voted for this resolution, No. 2145 of 1966, which provided the basis for all subsequent resolutions on this issue. There has been a series of these, from both the General Assembly and Security Council. In 1970, after the deadline set for South Africa to leave Namibia had expired, the Security Council decided to refer the matter back to the International Court of Justice for an advisory opinion of the legal consequences for States of South Africa's continued presence in Namibia.

The Court's opinion was announced in June 1971. It advised the Security Council that States had the following obligations: To recognize the "illegality of South Africa's presence in Namibia"; to recognize the "invalidity of its acts on behalf of or concerning Namibia"; "to refrain from any acts and in particular any dealings with the Government of South Africa implying recognition of the legality of, or lending support or assistance to, such presence and administration."

U.S. policy on the question of Namibia is quite clear. It accepts the advisory opinion of the International Court of Justice, and is committed to finding a practical solution to the problem of South Africa's illegal occupation of Namibia. This was stated to the General Assembly in the speech by Secretary of State Rogers at the beginning of the current session, on October 4, 1971:

In Africa, where the right to a freer existence is still denied to many, we are constant in our support of practical and peaceful means to achieve self-determination and end racial discrimination . . . Consistent with that objective we have decided to accept the advisory opinion of the International Court of Justice on the legal consequences for states of South Africa's continuing occupation of Namibia.

The United States announced last year that it would discourage investment by its citizens in Namibia and deny credit guarantees and other assistance for trade with that territory. In his explanation of the affirmative U.S. vote on Security Council Resolution 283 of 1970, the U.S. representative stated that his delegation was gratified to note that the economic measures which States were called upon to take in operative paragraphs 4 through 7 of the resolution were consistent with and in fact, he believed, reflected the policy already enunciated and being implemented by his government. The relevant paragraphs are worth recalling. They are as follows:

The Security Council . . .

4. Calls upon all States to ensure that companies and other commercial and industrial enterprises owned by, or under direct control of the State, cease all dealings with respect to commercial or industrial enterprises or concessions in Namibia;

5. Calls upon all States to withhold from their nationals or companies of their nationality not under direct government control, government loans, credit guarantees and other forms of financial support that would be used to facilitate trade or commerce with Namibia;

6. Calls upon all States to ensure that companies and other commercial enterprises owned by the State or under direct control of the State cease all further investment activities including concessions in Namibia;

7. Calls upon all States to discourage their nationals or companies of their nationality not under direct governmental control from investing or obtaining concessions in Namibia, and to this end withhold protection of such investment against claims of a future lawful government of Namibia.

The measures outlined in these paragraphs of resolution 283, which the United States supported so enthusiastically, are very far reaching. I find the official policy statements very encouraging in this respect. I would simply ask when it is to be implemented, and who is to be responsible for this implementation. In my experience of Government, foreign policy tends to be kept in a separate compartment, and not communicated to those who need to relate it to taxation questions, Government contracts, and instructions to Government-owned corporations. I wonder if this committee is satisfied that there is sufficient coordination of Government policy on the issue of Namibia. I do not know of any of the U.S. commitments being honored as yet, apart from the ban on involvement by the Export-Import Bank. I should be happy to be proved wrong.

Among the Government agencies which should be involved in the application of policy are the Internal Revenue Service, the Securities Exchange Commission, and the Federal Trade Commission. As regards taxation questions, the committee which is being set up to coordinate nongovernmental interests in Namibia has consulted private tax counsel. We have been given to understand that U.S. persons (individuals or companies) who earn income in Namibia and pay tax on that income to South Africa are not entitled to credit these taxes against U.S. income tax under the laws as they now stand.

This is because taxes paid to South Africa under such circumstances are not taxes as defined by U.S. law. The question which will therefore arise is: why has the IRS not done anything about this? A related factor is the U.S. double taxation treaty with South Africa, which purports to cover Namibia.

The number of U.S. companies in Namibia is small, and there are only two with any major stake. Their original investment has been recovered many times over. They are American Metal Climax and the Newmont Mining Corp., which between them control the biggest mining concern in Namibia, the Tsumeb Corp. Navarro Exploration Co. is also operating a mine there. Apart from these, there are some companies which are prospecting in Namibia. They are:

United States Steel Corp., participating in the African Triangle Mining, Prospecting & Development Co. (Pty Ltd.)

Gulf Oil Co.

Standard Oil Co., through its subsidiary, Chevron Oil and also in consortium with:

Texaco.

H. M. Mining & Exploration Co., prospecting for petroleum in consortium with:

Syracuse Oils. and Woodford Oil & Gas Co., Nord Mining Co.

Bethlehem Steel Corp., which is also a shareholder in Newmont Mining Corp.

Only 3 out of the 13 companies involved are actually operating concessions and deriving profits from Namibia.

The SEC is relevant here. It should be aware of the doubts about legal title which would arise with any new issue by the companies mentioned, or any other, purporting to relate to concessions in Namibia.

It would be reasonable for the SEC to notify the companies which are prospecting there of the difficulty of floating any new issue, in the event of their wishing to exploit a discovery of oil or minerals. Public regulatory agencies could require the balance sheets of all the companies concerned, as well as the reports of accountants and auditors, to reflect the invalidity of their title in Namibia.

Two questions arise in connection with the Federal Trade Commission. The first is the question of rules of the General Agreement on Tariffs and Trade (GATT). Since South Africa cannot claim the benefits of GATT membership for Namibian exports, arising out of South Africa's own "Most Favored Nation" status, Namibian products would have to be treated separately from South African ones. Those which could be from either place would be of doubtful origin. There are established procedures for cases of this kind in GATT. Here, the onus of proof would be on South Africa to produce evidence of South African origin, in order to obtain MFN rates of import duty. The same conditions apply to South Africa's claim to represent Namibia on any international organization or agreement. All U.S. delegations to the United Nations specialized agencies should at least be briefed on U.S. policy as regards Namibia.

The second question relating to the Federal Trade Commission is that of the ownership of goods imported from Namibia. Payment for mineral licences, for example, may well have to be considered as void if the fee was paid to South Africa and not the United Nations, the legal authority. The goods would then perhaps have the status of stolen or smuggled goods, and liable to confiscation. Any commercial transaction is then called into question: insurance, bills of lading, storage, customs clearance, et cetera.

Conversely, the U.S. authorities should be prepared to accept the validity of licenses, concessions, grants, and other contracts obtained from the authorized United Nations dealing with Namibia. This is at present the Council for Namibia, together with the United Nations Commissioner for Namibia when he is appointed. The United States should, to be consistent, support the strengthening of the Council for Namibia, and should be prepared to serve on the Council in order to further its prestige. The Council's right to levy taxes and conclude licensing and other agreements for Namibia would of course be supported. Objections from the U.S. Mission to the United Nations seem to rest largely on a pessimistic view of the present effectiveness of the Council for Namibia. This does not provide a convincing excuse for a failure to improve its effectiveness for the future.

Speculation about the effect on South Africa of this kind of action is very difficult. However, there is no doubt that the South African authorities are worried even by the purely diplomatic pressure which has been exerted so far. The Government spokesman on the territory, Mr. du Plessis, said recently that the current political uncertainty and even threats of international intervention were not beneficial to the economic development of South-West Africa. This would eventually mean that the territory would be less self-sufficient than it could have been, and a heavier burden would consequently be placed on South Africa.

Increasing the pressure on South Africa for its occupation of Namibia would in itself be in the interests of the United States, whether

or not it is successful. With the China issue settled, Namibia has become the primary issue of the current General Assembly session. The United States has been said to be in need of an issue where it can restore its international reputation for the defense of freedom, democracy, and the rule of law. Namibia, and southern Africa as a whole, could prove to be the right issue. Simply by carrying out its policy commitments, the United States could contribute substantially to a peaceful settlement of this explosive African issue, and to the standing of the United Nations.

If it wanted to, the United States could use its economic links with South Africa to enforce a withdrawal from Namibia. As we have seen, South Africa is dependent on an influx of new foreign capital. Any threat of reducing the flow, possibly with reference to article 2 (5) of the United Nations Charter, could be enough in itself to make South Africa recognize its international responsibilities, as well as its obligations to its own African people.

Thank you, Mr. Chairman.

Mr. Diggs. Thank you very much, Miss Rogers. You indicated that you had an opportunity to visit Namibia earlier this year. Could you comment on the law as it applies to Namibia, that is, the South African law, such as the Group Areas Act. Does that apply there?

Miss Rogers. The general situation is that nobody, least of all the administrators in Namibia, are aware of which laws apply. This is a very peculiar situation, and I think a reflection of the uncertainty with which South Africa approaches its administration of the territory, and its attempts to try and evade international criticism for doing anything positive.

The Group Areas Act, for example, does not apply to Namibia, but it has applied in one case. This is an example of the selective application of law. Some South African laws, such as the Terrorism Act and Suppression of Communism Act, definitely do apply.

Some laws, such as job reservation regulations, do not seem to apply. However, the basic position is that even the lawyers in Namibia are not aware of the true legal position, and certainly the people of Namibia have no understanding of what their rights are.

Mr. Diggs. But there is control of economic activity, political activity, and other activity in the area. How do they exercise it in view of this rather confused legal situation? Do they just do it by intimidation or by custom?

Miss Rogers. I think their control is facilitated by the fact that they are not bound by any set of laws. The control is carried out by administrative action and enforced by South African police and also by the army units—which, in theory, are not there.

There is a great deal of intimidation. In Ovamboland, in the north of the country, a number of people told me of instances of people of their acquaintance being tortured without being brought to trial, and some of the people had themselves been subjected to arbitrary imprisonment and torture without trial.

Mr. Diggs. Could you elaborate further upon your visit to Ovamboland, because I think this is one of the more interesting areas of Namibia, because of the importance of the Ovambos in that area, who constitute the largest ethnic group, as I understand it.

Miss Rogers. It is a very interesting area indeed. The picture which is upheld by the South African Government is of a primitive reserve

area where the people have no awareness of the true issues, and probably because of this support the South African administration, at least tacitly.

So it was very interesting to go there, especially immediately after the International Court judgment, and ask people what their opinions were both on the judgment and on the question of South Africa's administration.

Basically, I didn't meet anybody who professed to be ignorant of the Court judgment. Everybody I met knew a great deal about it, and were very excited about it. So it is something of great significance to them.

Similarly, nobody I met actually supported the South African administration. The most that I got in this direction were a couple of people who said they weren't at liberty to say what they thought, which I think is clear enough. But the overwhelming majority of people said freely that they were delighted with World Court's judgment. They were very impatient for the United Nations to do something to enforce this, and they had had enough of South African administration, and given the opportunity, they would like to see it go as soon as possible.

Mr. DIGGS. The second largest ethnic group there is the Hereros. Did you get an opportunity to get some insight into their attitude?

Miss ROGERS. Yes; I met the chief of the Hereros. Chief Clemens Kapuuo, who I think is a very remarkable man. They have always been the most vocal in opposition to South Africa ever since the end of the Second World War, and Chief Kapuuo was carrying on that very brave tradition.

His attitude is, of course, that he welcomes the judgment. He agrees South Africa has no right to be in the country of his people, and the other peoples of Namibia, and in particular he is very concerned about the economic involvement of large corporations in mining activities in Namibia, and this obviously applies to the U.S. corporations, because although there are only three involved, the actual profits derived from the territory are out of proportion to the stake that they put in initially.

He has sent a petition to the United Nations through Michael Scott, who has for a long time been a representative of the Hereros at the United Nations, complaining about the violation of the land and the mineral resources, and the fact that, as he fears, South Africa will eventually leave the territory in a number of years' time only after it has exhausted the riches which are there, and will leave a completely barren country to the people who have the right to it.

Mr. DIGGS. Did you have an opportunity to talk with the Basters?

Miss ROGERS. No; I didn't meet any of those, so far as I am aware. I don't know what tribal origin everybody was that I spoke to, but I did meet a number of coloured people of Windhoek, and they are in fact numerically a larger group than the Basters. A lot of them have come from South Africa, from Cape Town, largely because job reservation doesn't apply and they can get better jobs there.

On the whole, the coloured people are extremely demoralized. They don't have the kind of unity that the Hereros have, or the Ovambos have, though their leaders are also Government appointed. They have

very big social problems, and to a large extent they seem to have given up the struggle.

Their leader is also Government appointed and makes statements in support of the Government.

However, the majority of the coloured people that I spoke to, although they were less outspoken than the Africans, said very definitely that they were discontented with the present situation. They wanted to see the United Nations enforce the ruling of the International Court, and basically, I think they wanted to see some kind of joint action with the African groups in the territory.

This was something that I heard again and again, the complaint that South Africa was dividing the territory and would not allow the various tribal groupings to meet with each other.

Mr. Diggs. There was a great deal of protest among church circles. Did you have an opportunity to observe any of this, either from the Lutherans, the Finnish Church, the Anglicans, or any other denominations?

Miss ROGERS. I was involved in the Anglican discussions on their reaction to the statement by the Finnish and Rhenish Churches, and I have copies of their statement. I think the Anglican Church has been for a long time virtually the only opposition mouthpiece to South Africa.

The joint statement by the other two churches, I think, is very significant indeed. I tried to meet the Finnish bishop in Ovamboland, who is an African. Unfortunately, he wasn't there, but I did meet a number of his staff. I got the impression that it was very much a grassroots decision that the church should voice its support for the World Court judgment and appeal for rights.

The atmosphere was one of extreme relief, that at last they have been able to say what they thought about this matter.

Mr. Diggs. How much does the contract labor system there contribute to this anti-South African Government opinion?

Miss ROGERS. I think it is a major contributor, especially with the newest twist, which is the construction of barracks for workers who are separated from their families. This is happening in South Africa, too, and the kind of social disruption which results is evident in South Africa and Namibia.

I think the labor system in Namibia is worse than that in South Africa, because the element of choice is completely removed. At least in South Africa there is some type of choice between farm labor and mining work, and work in the manufacturing sector.

In Namibia, this choice is removed, and for the majority of Africans—that is, those who live beyond the police line in the northern reserves—if they apply for work down in the south, and whether they are educated or not—they simply have labels tied round their necks or around their arms and are sent off down the railway line, and the next they know, they have been assigned to an employer.

If they leave the employer before the end of the contract, they are subject to prosecution, and some very, very harsh penalties. This is the closest approximation to slavery that one could think of, I believe.

Mr. Diggs. Did you notice under these conditions any expansion on the part of the American or other Western countries? One would think

this kind of repressive atmosphere would in itself be discouraging for business expansion.

Miss ROGERS. I think in Namibia the business interests are extremely limited in kind, basically to mining, and to the commercial sector which depends on the agricultural and fishing industries.

Foreign involvement is almost exclusively in the mining industry. There are also banks involved. When I spoke of the commercial sector, I mean banks and insurance companies primarily.

British involvement, for example, is in the form of Barclays Bank and the Standard Bank, and very notably a massive new investment in a uranium mine in Namibia. This I find very disturbing indeed, and in fact an example of the lack of coordination on foreign policy which I have mentioned.

According to the newspaper reports, the decision for the British Atomic Energy Authority to conclude a long-term contract with Rio Tinto-Zinc for uranium mining in Namibia was done without reference to the Foreign and Commonwealth Office. In other words, this was a contradiction in foreign policy, and one which represented a major involvement by the United Kingdom in what is basically an illegal situation.

As far as other foreign involvement is concerned, when I was there, there was a distinct atmosphere of nonexpansion.

A number of South African firms had stopped expanding their activity, notably Consolidated Diamond Mines, which is a subsidiary of Anglo-American. It had withdrawn its geologists, had stopped deep-sea mining of diamonds; and the Canadian company, Brilund Mines, which was operating an oil prospecting concession in the north of the territory, also withdrew, although there are reports of its having found traces of oil sources.

So that I think the general picture is of business involvement in Namibia being discouraged by the present situation.

If nothing positive is done, though, I think that things will soon get back to normal.

Mr. DIGGS. We do have a new American-owned mine open up near Windhoek, do we not?

Miss ROGERS. I believe so. I have a feeling this is under a corporation. I don't know the details there.

Mr. DIGGS. As you recall, this whole area was a hotbed of Nazism during World War II. Did you find any residual area of Nazism in and around Windhoek?

Miss ROGERS. My first indication of this was meeting in Cape Town, in fact, a German man from southwest Africa, who said that he knew personally of at least one person who was living under an assumed identity and was in all probability a former Nazi war criminal. He said that this didn't seem to be a unique case.

But as far as the general population is concerned, there is certainly evidence in the sense of the general attitude being extremely racist, very much rightwing in every sense, isolationist, not wanting to know what is going on in the outside world, although very much afraid of what is likely to happen.

I think a lot of this is based on fear, because of their insecurity.

There is plenty of evidence in the form of what goes on in the German Lutheran white church, and, of course, the churches are segre-

gated in Namibia, except for the Anglican Cathedral. The German Lutheran Church hands out portraits of Hitler to confirmation candidates, for example, and similar things happen in the German high school. The Germans are not separated from the Afrikaners, and there is a lot of sympathy among the Afrikaners in Namibia for the Nazi cause, as, of course, was the present South African Cabinet during the war.

Mr. DIGGS. Yes. We didn't want to overlook the political affiliations of the present Government over there. It traces right back to the Nazism.

Just one other question. You indicated that the Job Reservation Act was being handled in a different way in Namibia, as opposed to the way it was being done in South Africa. Could you elaborate on that?

Miss ROGERS. I am basically saying what I was told by people involved in business and commerce in Namibia. They said that Coloureds and Africans could be used in positions where it would not be feasible in South Africa, although I think that there still are the kind of constraints on employers that there are in South Africa, where although the law doesn't apply, the trade unions exert tremendous pressure, and these, of course are white trade unions again, and they put on pressure for blacks not to be given jobs.

The fact that job reservation is relaxed doesn't mean that the rate for the job applies, and what will tend to happen is that employers will benefit rather than the black workers, because they will be paid slightly more, or the same as an unskilled worker, but will be doing valuable work.

Mr. DIGGS. In the Caprivi Strip and Walvis Bay, which is a part of Namibia in a sense, did you uncover any information that might be helpful to the subcommittee in the terms of administration of those two areas?

Miss ROGERS. I think they are separate considerations. Under the mandate, Walvis Bay belongs to South Africa. However, it is administratively and in almost every sense being seen as part of South-West Africa by the local administration. The sole difference is that it forms part of a South African constituency for general election purposes.

Much more glaring, I think, is the case of the Caprivi Strip. South Africa unilaterally declared that this was to be part of South Africa, both legally and administratively, and it is openly militarizing this strip.

This is in direct violation of the mandate, which South Africa continues to insist that they administer in accordance with. This gets more and more implausible.

The strip is cut off from the rest of the territory, virtually, and there is a fairly intense liberation movement there.

Mr. DIGGS. Does counsel have any further questions?

Mrs. BUTCHER. I would like to know, Miss Rogers, whether you are able to make any observations on the conditions at Tsumeb. (See p. 340 of the appendix for memorandum on the operation of U.S. investments in Namibia.)

Miss ROGERS. Not at first hand, but I did hear from a lot of people who had been to Tsumeb. It had a very bad reputation. They compared it unfavorably to the wages and conditions applying in Con-

solidated Diamond Mines operations. For example, they were very concerned about living conditions. They say that the barracks in which they were forced to live were indistinguishable from prison, and if they tried to leave the barracks, then they were simply removed to the prison, which happened to be next door.

Mrs. BUTCHER. Mr. Chairman, Miss Rogers referred to a petition submitted by Chief Clemens Kapuuo to the United Nations. I believe it should be made part of the record.

Mr. DIGGS. Without objection, that document will be obtained and added to the record.

(The information referred to follows:)

AFRICA BUREAU PRESS STATEMENT

In a remarkable letter, reproduced below, Chief Kapuuo of South West Africa (Namibia) is now calling upon his friends in Britain to use new tactics in contesting South Africa's illegal occupation of his country.

Chief Kapuuo's letter is addressed to his solicitor Miss Sarah Leigh:

THE AFRICA BUREAU,

Windhoek, South West Africa, September 3, 1971.

MISS SARAH LEIGH,
(of *Lawford & Co.*),
Inns of Court,
London, England.

DEAR MISS LEIGH: I am writing to you as elected head of the Herero peoples of South West Africa. I am deeply concerned, and so are my peoples, with the way the natural mineral resources of this country are being removed from it with the full knowledge and permission of the South African government. From statistics given hereunder¹ you will see that the future of the Herero and other indigenous peoples will be greatly affected by the present policy of the illegal South African government. You may well know that apart from its mineral wealth which is substantial, South West Africa is a poor country. The Africans who will be brought to these mines under the contract labour system, who will work for periods of twelve to eighteen months deprived of their natural family life, unable by current laws to negotiate their salary, and prevented under strict laws from bettering their conditions, benefit but little. This country, which is our country, is being exploited by greedy entrepreneurs, robbed of its wealth, and rendered barren for the future. Our fear is that when freedom finally comes to this land, it will be returned to us with no minerals left. Thus you will see the one wonderful asset which we have for developing the land for the wellbeing of all its people will have been taken away from us. We deplore what the government in Pretoria is currently allowing. We have not been consulted in all this. We wish you to take whatever action you may deem necessary to bring the matter to the highest international court of justice. Further we appoint the Reverend Michael Scott, who has so wonderfully upheld our cause at the United Nations to act in association with you in this respect as our agent.

We would like to make it clear that in this matter our appeal as the Herero nation does not in any sense preclude appeals by other African peoples in this territory. At a time when the International Court has declared South Africa's continuing presence in South West Africa to be illegal, we would urge that immediate steps be taken by the highest bodies to protect the rights of the indigenous peoples of this territory from being exploited. We wish all foreign firms to be removed immediately; we wish to be consulted on ways and means by which our peoples can have a fairer share in benefitting from the wealth of the land of their hirth.

Signed on behalf of the Herero people,

CLEMENS KAPUUNO.

Chief of the Herero Peoples of South West Africa.

¹ Available at the Africa Bureau.

The Chief's solicitors are instructing leading Counsel to advise on the merits of proposed proceedings in the English courts designed to secure compliance with the recent decision of the International Court of Justice at the Hague delivered on the 21st June this year. In this decision the Court declared the South African presence in South West Africa illegal, since the mandate given by the League of Nations has been withdrawn, and calls upon her to withdraw from the territory. The decision denies the legal right of South Africa to exploit South West African raw materials by international companies under concession from South Africa.

Following these developments the Reverend Michael Scott is going to New York to make a submission to the UN sub-committee on Namibia, for further UN action.

Mr. Diggs. Thank you, Miss Rogers, for your enlightenment of the subcommittee.

The subcommittee stands in recess until 2.

(Whereupon, at 12:30 p.m., the committee recessed, to reconvene at 2 p.m. the same day.)

AFTERNOON SESSION

Mr. Diggs. The subcommittee will come to order.

At the request of the gentleman from Pennsylvania, Mr. Whalley, who is away from Washington today on official business, an article from the November 1 edition of Time Magazine, entitled "Apartheid: Cracks in the Facade," will be entered into the record at this point.

(The article referred to follows:)

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, D.C., November 8, 1971.

DEAR MR. BENSON: Please read the enclosed article.

At the next meeting of the African Subcommittee, I would appreciate this being made a part of the record.

Sincerely,

J. IRVING WHALLEY.

APARTHEID: CRACKS IN THE FACADE

One of the swingiest bars in Pretoria these days is in the Boulevard Hotel, which is home to diplomatic and technical delegates from black African nations. White Pretorians go there simply to meet blacks—something that they would not have dared to do even a year ago. Even more startling, Pretoria's hostesses now consider it a social must to have at least one black man at a party; as a result, the only resident black ambassador, Malawi's sherry-sipping, highly professional Joe Kachingwe, is being run ragged. Kachingwe's six-year-old daughter Chipso recently became the first black student admitted to an all-white primary school. When one right-wing weekly greeted the event with a front page headline reading WHAT IS THIS KAFFIR DOING AMONG OUR SCHOOLCHILDREN?, most of the South African press hooted down the paper for reaching "new depths of tastelessness."

Loosening Logjam.—Can this be South Africa, the land long marred by an ugly policy of *apartheid* (separateness), which enables 3,800,000 whites to exert total dominance over 15 million black Africans, 2,000,000 coloureds (half-breeds) and 600,000 Asians? The structure of *apartheid*, which the late Prime Minister Daniel Malan and his largely Dutch-descended Nationalists began to build in 1948, still towers over everything. No black can stay in a "white" hotel, own land or property in white areas, belong to a trade union, own a home, or vote in a countrywide election. Black political development is restricted to eight Bantustans, or "homelands"—districts set apart for a portion of South Africa's blacks, where they are gradually being granted limited self-government under

a policy of separate development. But this year, reports TIME Correspondent John Blashill, "the clear spring air of South Africa fairly crackles with talk of change. There are times in the life of every major nation when it is forced to stop in its tracks, take painful stock of itself and ask itself where it is going. For South Africa, such a time has finally come." Says Novelist Alan Paton, former leader of the banned Liberal Party: "There is a loosening of the logjam." Adds Helen Suzman, the opposition Progressive Party's only Member of Parliament: "For the first time in many years, I'm optimistic about the future of South Africa."

Fashionable Idea.—The changes are more than symbolic. The government has promised new regulations that will effectively eliminate the hated "pass laws" that require all blacks to carry identity cards and severely restrict their movement; it was during a protest against these laws that police opened fire at Sharpeville in 1960, killing 67 blacks and injuring hundreds. The government-owned railway is ignoring laws against hiring nonwhites for skilled jobs; the local General Motors plant, whose labor force is 52% nonwhite, has been quietly doing the same thing for years. The Trades Union Council, the country's largest labor organization, has demanded that blacks be given the right to join unions and be paid the same wage as whites. Equal pay for equal work has been adopted by the city of Port Elizabeth, the Standard Bank and Barclay's Bank of London, and Polaroid. The idea has become, as the Johannesburg *Star* recently put it, "as fashionable as hot pants." But in many areas, it will take a long time to close the economic gap. White factory hands earn six times as much as blacks doing comparable work, white miners 17 times as much, and white teachers make more at the bottom of their pay scale than blacks at the top of theirs.

Cracks are gradually appearing in many of the petty forms of segregation with which *apartheid* has been buttressed. In Durban, the city council recently threw a multiracial cocktail party. In Johannesburg, a few adventurous whites have begun to take black friends to restaurants and bars; they are often stared at, but invariably served. Last week South Africa's 8,000-strong Chinese community won the right, in a test case, to live in white areas "where this is permitted by the community."

The prime reason for the change is economic. South Africa is rapidly industrializing, with more skilled jobs opening up than there are white workers to fill them, and is thus ever more dependent upon skilled black labor. If the laws reserving skilled work to whites were really enforced, or if blacks were transported en masse to the Bantustans, production lines would be crippled and trains would halt.

Moreover, 71% of South Africa's white electorate are aged 36 or under, and they are less affected than the older generation by fears of the *swart gevaar*, or "black peril." Seven of every ten Afrikaners are city dwellers, accustomed to seeing blacks not as savages but as urbanites like themselves. More whites are working alongside blacks; and if familiarity has not always bred respect, at least it has helped to reduce racial fears. On a national level, the country's black politicians have been concentrating on achieving black power in the Bantustans, a goal acceptable to the Afrikaners. Chief Gatsha Buthelezi, 42, chief minister of Zululand, last month told white students at Stellenbosch University that "if the majority of whites have now decided to set up blacks in separate states, we have no means to resist it, even if we wanted to." But, he declared, "it must be clear that we do not expect sham self-government, but the real thing." That approach, of giving blacks a political voice in the Bantustans, has eased the Afrikaner's fear of being overwhelmed by black demands in the rest of the country, and has slowly begun to erode the underpinnings of *apartheid* in the cities.

Tortured Prisoners.—The foundations of *apartheid* are still too solidly entrenched to be done away with for a long time to come—if ever. The prison population is still the world's highest per capita, with 424,000 blacks behind bars, half of them for petty infractions of the pass laws. The jails also hold 800 persons who are officially classified as political prisoners. According to one recent account, the government still has 42 persons under house arrest and out of circulation, including a grandson of Gandhi (no newspaper can mention their names). In Pretoria, the terrorism trial of the Very Rev. Gonville French-Beytagh, the Anglican Dean of Johannesburg, is now in its third month. In Natal, where 14 nonwhites are also on trial under the government's all-purpose Terrorism Act, the defense has charged that all of the prisoners and some of the government witnesses were tortured to make them talk.

In considering even the most minor relaxations, Prime Minister John Vorster must still take into account his Nationalist Party's dwindling but vocal right wing, known as the *verkrampies* (cramped ones). Vorster, 55, a cautious pragmatist during his five years in office, has already adopted a successful "outward-looking" foreign policy of providing trade and aid to black African states. Last month he declared: "Your government is now entering an era of the most practical politics South Africa has ever known. The time of speeches, blueprints and fancy flights has gone." The statement could have meant anything, but aides insisted that it was the Prime Minister's way of telling the *verkrampies* to fasten their seat belts for even bigger changes ahead.

Mr. Diggs. The hearings of the Subcommittee on Africa on U.S. Business Involvement in Southern Africa are continued. We have requested our distinguished Secretary of Defense, Mr. Laird, to have one of his deputies address a number of issues in response to points raised in a letter dated September 20, 1971, those points mainly being a full picture of all the relationships of the Department of Defense in such areas as:

- the Air Force tracking station or stations, including such questions as housing for personnel, contracting for goods and services, land and property acquisition, schooling of children, any employment of local personnel;

- U.S. military flights to and from these areas;

- any military involvement in the Namibia, including the Caprivi Strip, and in Angola and Mozambique;

- procurement of missiles and other equipment from South Africa for experimentation and other purposes;

- and cooperation with the South African Government in regard to the research or testing or developing of missiles and other military equipment;

- use by the Portuguese authorities of U.S. defoliants;

- the question of South Africa's relationship to NATO;

- implications of Portugal's NATO membership with regard to Angola and Mozambique;

- military assistance and sales programs in these areas;

- the arms embargo;

- geodetic and mapping programs in these areas;

- military training programs either in South Africa or the United States, including correspondence courses and participation by the South African military personnel in courses in the United States, whether under governmental or private auspices;
- and

- activities of Defense attachés in these areas.

Secretary Laird has sent to the subcommittee this afternoon the Honorable James H. Noyes, who has been Deputy Assistant Secretary of Defense in the Office of the Assistant Secretary of Defense for International Security Affairs since the 15th of September of last year. He is Deputy Assistant Secretary of Defense for Near Eastern, African, and South Asian Affairs.

The Secretary has primary responsibility for all policy decisions, policy matters of defense interests pertaining to the countries of the Near East and South Asian region, including Greece and Turkey and for Africa.

He served before that as Director of the Northeast Asia Division for the Asia Foundation in San Francisco.

The complete text of his biography will be entered into the record.

He is accompanied by Mr. George W. Bader, Director, Africa Region, International Security Affairs, Department of Defense. Mr. Bader has held that position since July of 1966, and is responsible for the Defense Department aspects of international security relating to Africa. Mr. Bader is a career civil servant and is a member of the State Department's Senior Seminar in Foreign Policy.

We welcome both of you gentlemen, and your associate, Dr. Lardner, who accompanies you this afternoon. We welcome you as representatives of the Defense Department in response to the subcommittee request.

You have a prepared statement, Mr. Secretary, you may proceed to read that.

STATEMENT OF HON. JAMES H. NOYES, DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR NEAR EASTERN, AFRICAN, AND SOUTH ASIAN AFFAIRS, DEPARTMENT OF DEFENSE

BIOGRAPHY

James H. Noyes was sworn in on 15 September 1970 as Deputy Assistant Secretary of Defense in the office of the Assistant Secretary of Defense for International Security Affairs.

As Deputy Assistant Secretary for Near Eastern, African, and South Asian Affairs, Mr. Noyes will have primary responsibility for all policy matters of Defense interest pertaining to the countries of the Near East and South Asian Region, including Greece and Turkey, and for Africa.

Mr. Noyes was born 29 March 1927, at San Francisco, California. He received his B.A. degree from Yale University in 1950. Subsequently, he studied for one year as a special student at Allahabad University, India, and, in 1953, received his Master's degree in political science at the University of California, Berkeley. He served both in the Middle East and in the United States with American Friends of the Middle East, Inc., during the period 1955 through 1959. After leaving the American Friends of the Middle East, Incorporated, Mr. Noyes served as a lending officer in Bank of America's International Banking Administration, San Francisco, until joining the Asia Foundation in September 1962.

Immediately before this Defense appointment, Mr. Noyes served as Director, Northeast Asia Division for the Asia Foundation, San Francisco. From 1965 through 1968, he was assigned as the Foundation's representative in Ceylon.

Mr. Noyes is married, and has three children.

Mr. NOYES. Mr. Chairman, I am pleased to be here with you today as you continue your inquiry on U.S. involvement in southern Africa.

The nature of our military interests in the area is relatively limited, and my prepared statement will accordingly be rather brief. I will, of course, welcome any questions that members of the subcommittee may have.

Southern Africa, particularly the Republic of South Africa, is an area which, while not critical, nevertheless has importance for U.S. strategic interests. It is an area adjacent to the searoutes of communications between the South Atlantic and Indian Ocean. This importance increased with the closure of the Suez Canal.

Also, it has the only harbors in Africa south of the Sahara which have facilities capable of handling major vessels. Finally, its geographic location has been peculiarly well suited for facilities in support of our missile and space programs.

At the outset I would like to make clear that the pursuit of our military interests and contacts in southern Africa are strictly governed by U.S. foreign policy objectives in the area. As a consequence, our military relations are very limited.

As a matter of policy, we avoid any military relations which could reasonably be construed as condoning or supporting the racial policies of the minority regimes or which would directly contribute to improving their capability to enforce those policies.

I would like to elaborate on the details of this military relationship on a country-by-country basis, since there are differences within the area.

We can quickly describe our military relations with Rhodesia and Namibia (South-West Africa). We have had none with Rhodesia since its Unilateral Declaration of Independence in 1965, nor with South-West Africa since the termination in 1966, by the U.N. General Assembly of South Africa's mandate. Since those dates, no U.S. military visits have been made to either area.

In strict adherence to our arms embargo, the Department of Defense sells nothing to the Government of South Africa. While the Department of Defense makes no sales to that Government, I think it important to point out that there are items under the licensing control of the Departments of State and Commerce which it could purchase if they met the criteria of our arms embargo.

Such purchases would be controlled either through the system of export licenses by the Department of Commerce or, in the case of munitions list items, by the Office of Munitions Control in the Department of State.

In the case of items under control of the Office of Munitions Control in the Department of State, the views of the Department of Defense may be sought as to the military implications of the requested export.

Cases originating in the Department of Commerce for items on which there may be a reasonable question under our embargo policy are referred to the Department of State, where they are initially considered by a State Department committee. The Departments of Defense and Commerce are *ex officio* members of this committee and contribute technical information. If a borderline case is not resolved at the working level between the Departments of State and Commerce, the issue can be raised to the interagency Operating Committee of the Advisory Committee on Export Policy. The Department of Defense would participate in deliberations of that committee.

Consistent with our arms embargo, we do not participate with South Africa in any research and development of military equipment. (See p. 339, of the appendix for Department of Defense's reply to "those recommendations" of the chairman in his Action Manifesto of December 17, 1971, "dealing with military training, research, and development and our military attachés in South Africa.") Neither do we provide any training to South Africans, including correspondence courses, which would have a direct application to combat capability or to the enforcement of its internal policies.

We have, however, from time to time permitted attendance at some functions such as medical conferences, and some courses, such as in the field of air safety, where there is a direct benefit to the operation

of airfields which are used for commercial flights as well as by our own military aircraft.

When I state that the United States does not cooperate with South Africa in any research and development of military equipment, I am aware of the committee's interest in the recent U.S. tests of a surface-to-air missile developed by a French firm with, we understand, some financial support from South Africa.

The U.S. Army made preliminary tests of this weapon, as it does for many new weapons which it has the opportunity to test, but has made no decision as to the desirability of further testing or whether it is interested in obtaining a license to produce this weapon. The South African Government was not a party to the arrangements for these tests. Should we be interested in obtaining production rights for this weapon, it is our understanding that negotiations would be conducted entirely with the French firm.

Our primary channel of routine military contact with South Africa is through our exchange of attachés. South Africa has an attaché and an assistant attaché resident in Washington. We have a Defense attaché, Army attaché, and Air Force attaché resident in Pretoria and a Navy attaché resident in Cape Town.

Our attachés provide routine contacts with their counterpart services and report as customary on all matters of military interest. They also report as best they can on matters of military interest in Rhodesia and South-West Africa; although, as I have earlier indicated, they no longer visit those areas.

As part of a worldwide program, we are interested in obtaining maps, charts, and geodetic information on southern Africa. No U.S. personnel, however, have engaged in joint programs for collecting mapping information in southern Africa.

Since 1952 we have had an arrangement for the exchange of South African unclassified maps and aeronautical charts of southern Africa for an equivalent number of ours. This was supplemented in 1970 by a reciprocal agreement with South Africa permitting each country to reproduce the unclassified hydrographic charts of the coastal and navigable waters of the other country. This is an agreement of convenience to reproduce charts which are readily available by purchase.

We have also had several projects involving the collection of geodetic information in southern Africa. There are two such current programs. One involves the collection of magnetic information by aircraft especially instrumented for this purpose. The second is the collection of data from our navigation satellites. This is accomplished on a continual basis at our Air Force tracking station near Pretoria. In both of these projects the information collected is unclassified and is made available publicly.

Our Air Force tracking facility, station No. 13, is the terminal station on the Air Force Eastern Test Range and has played a key role in our missile and space development program during the 1960's. Under two agreements with the South African Government beginning in 1960, we have authority to use this facility subject to termination upon 6 months' notice.

The station's activity has been reduced somewhat as a reflection of current reduced requirements. It is presently used by us only for the support of the Navy geodetic project to which I have already re-

ferred, in which information is received from a navigation satellite and transmitted to Johns Hopkins University.

The actual operation of the station has, from the outset, been performed by the Pan American World Airways and its prime subcontractor, the Radio Corporation of America. The employment of personnel has been entirely conducted by these contractors. The U.S.A.F. contract with Pan American contains the standard nondiscrimination clause required in all U.S. Government contracts. Local South African personnel, both black and white, have been employed at the station in various capacities.

At the present time, we have one U.S. Air Force NCO master sergeant and three U.S. civilians at the station. In addition, there are 10 South Africans, eight whites, and two blacks. The station is an extremely austere facility, limited to buildings and equipment directly associated with the instrumentation of the station. There are no eating or housing facilities.

During the period of reduced activity, we are permitting utilization of some of the facilities by the South African Council for Scientific and Industrial Research for weather research and by the South African Postal Department for radio communications.

Under our agreement for the operation of station No. 13, we also have continuing authority from South Africa for support flights from the United States each month. These flights down the Eastern Test Range, about two per month, carry equipment and personnel to support station No. 13 at Pretoria, our tracking station on Mahe in the Seychelles and, when space is available, support for our Embassy at Pretoria.

We do not have any flights to South Africa by combat aircraft. As the requirement arises, we do deploy search and rescue aircraft and instrumentation aircraft to operate out of South African airfields in support of NASA space flights. Although the requirement for such support has decreased over the past year or so, we did have an instrumentation aircraft deployed to South Africa in late September to support a NASA orbiting solar observatory launch.

In none of the Defense Department's relations with South Africa do we have any agreement which would imply our acceptance of its laws of racial discrimination. In our contracts for the operation of our tracking station and in our arrangements for aircraft flights to South Africa, we make no agreement which involves racial segregation. Were we to be requested to do this, we would reject it.

For example, in 1965 arrangements were being made for flights from the U.S. aircraft carrier the *Independence* to a military airfield near Cape Town, and we were requested to assign white crew members only. As a matter of principle, we could not accept this restriction, and flight arrangements were canceled. Since 1967 we have not made use of South African port facilities except for emergencies.

Our military relations with Angola and Mozambique are conducted through Portugal. We have no military relations with these territories except for occasional visits by our attaché from Lisbon, overflight and landing by transiting military aircraft, and operational port calls, usually for refueling, by naval vessels.

We currently have a small military assistance and sales program for Portugal to support its NATO missions in antisubmarine warfare

and air defense. We do not provide Portugal with any military assistance to support its military operations in Africa.

Since 1961 we have prohibited the export of arms for use by either side in the hostilities in Portuguese Africa. We follow a similar policy with respect to training, and no Portuguese military students have received counterinsurgency training under our military assistance program since the early 1960's.

We have since 1961 required formal assurances from the Portuguese that any military material provided by the U.S. Government will be restricted to use in the NATO area. Our military assistance group in Portugal is responsible for end-use checks on material we supply. These checks are carried out through periodic inspections and occasional field trips.

We have informed the African states that we stand ready to examine all alleged violations. To the best of our knowledge the Portuguese have not violated their assurances. A considerable amount of World War II material of U.S. origin can be obtained through surplus arms sources outside the United States, over which we have, of course, no control.

In this connection, I would like to address the allegation that we have furnished defoliants to Portugal for use in combating the insurgency in Africa. The U.S. Government has not provided any defoliants or defoliant-related equipment or training to the Portuguese military. Of course, defoliants, like fertilizers, are readily available on the open market from a number of commercial sources, both United States and foreign.

The NATO-oriented military assistance which we furnish Portugal in fiscal year 1971 is approximately one-fourth of 1 percent of Portuguese annual military expenditures. Consequently, it is not even accurate to say, as is sometimes alleged, that our aid, although restricted to NATO purposes, in effect frees significant Portuguese resources for use in Africa.

Mr. Chairman, this concludes my formal remarks. I hope that I have been able to give you a clear overview of the nature and scope of our military relations in southern Africa. I realize, of course, that members of the committee may still have questions which they would like to raise on this matter. May I note that some questions may bear on classified information which, I would suggest, we may wish to discuss in executive session. Thank you, Mr. Chairman.

Mr. Deegs. Thank you, Mr. Secretary. I would like to begin with one question which is fresh in my mind because I recently directed a communication to the Defense Department through the congressional liaison. As a matter of fact, the same communication went to all the Cabinet posts. Whether or not it has been brought to your attention, of course, I am unaware. But you referred on page 5 to the Pan American World Airways and that Pan American and USAF contracts contain a nondiscriminatory clause. I wonder if you are aware of the fact that Pan American does not permit any of its black employees to go on any runs to South Africa.

And if you are aware of that—and this is a fact as I have it in writing—does this constitute a violation of said contract and, if it does constitute a violation, what is the remedy?

Black employees of Pan American are not permitted to bid on flights going into South Africa. They generally—those that get into Africa, are usually taken off in Lagos and they are not permitted to go to South Africa. That is prima facie evidence of the nondiscriminatory clause of their contract involving Americans—not black South Africans, but Americans.

**STATEMENT OF GEORGE W. BADER, DIRECTOR, AFRICA REGION,
INTERNATIONAL SECURITY AFFAIRS**

BIOGRAPHY

George W. Bader, Director, Africa Region, in the Office of the Assistant Secretary of Defense (International Security Affairs) has held that position since July 1966 and is responsible for DOD aspects of international security affairs relating to Africa.

A career civil servant, GS-16, Mr. Bader was born on January 29, 1930 in Chicago, Illinois. He was educated at Millikin University in Decatur, Illinois (BA, 1952) and the University of Chicago (MA, 1958). He served with the 11th Airborne Division from 1953 to 1955.

Mr. Bader entered the Federal Government in 1959 as a Management Intern in the Office of Civil and Defense Mobilization. In 1962 he transferred to the Department of Defense where he served in various staff capacities in the Office of the Director of Military Assistance, specializing in Latin America, the Near East and Africa. He is a member of the State Department's Senior Seminar in Foreign Policy (1968-69).

Mr. Bader is married to the former Virginia Jauch, and they have one daughter, Mary Ann.

Mr. BADER. To clarify a point, are you talking about Pan-American employees associated with the airline? You are not referring to Pan-American employees associated with the operations of station 13?

Mr. DIGGS. I am talking about Pan-American employees of the airline. Presumably the contract covers Pan-American period—all employees.

Mr. NOYES. To answer your question, I was not aware of that information.

Mr. DIGGS. It just arrived this morning and I have not had an opportunity to check on the responses from the various departments, but I am unaware that Defense has been responsive to that. The communication went out about 2 weeks ago.

Mr. BADER. We are not aware of that, and it is a subject, as far as it relates to station 13, that we only recently covered with the Air Force. We were again reassured that there was nothing in the ad-Pan American that manages the station. (A copy of the cover page and schedule of the Award/Contract by the Defense Department with Pan-Am, the U.S. civilian contractor operating station 13, is included on p. 349 of the appendix. The cover page and schedule of Pan-Am's subcontract with RCA appears on p. 351 of the appendix.)

Mr. DIGGS. Pan American is Pan American. The contract, as you have indicated, would cover all of its activities.

Let us begin with your definition of military interests in the area of southern Africa. You say it is limited and military relations are limited. Could you say just what this means? We have had, for example, this morning, the Atomic Energy Commission representatives

appearing before the committee, and they started out with that statement. The gentleman representing that agency had a three-page statement which started out by saying: "We have very limited relations."

I recall that when the Ex-Im people appeared before the committee, they started out by saying: "We have very little relations with South Africa." But when you get through with the questions, you find out just the opposite.

We had a gentleman this morning that had a three-page statement which seemed to reflect his evaluation of limited interest. We had 19 pages of questions which were supplemented by other questions which indicated that, in fact, it was quite revelatory to the witness that they, in fact, do have a considerable interest when you go right down the line.

So I am interested in your definition, as we begin our discussion here, of just what constitutes limited interest, limited relations.

Mr. NOYES. I think, Mr. Chairman, that judged by the usual criteria, in terms of assistance programs, port visits, exchanges of military personnel, and training programs, that our definition of "limited interest" is a valid one. The strategic importance of South Africa as a geographic body in the world, I think, is also undisputed, but to say that does not mean that the United States is interested in exploiting or pursuing specific advantages because of that geographic position.

Mr. DREES. Is it not a fact that support of apartheid requires South Africa to be able to defend itself not only internally but externally and that, therefore, the involvement of the United States or any other country in the South African defense complex automatically reflects an interrelationship there that is not quite as limited as the surface might indicate?

Mr. NOYES. It is not clear to me, Mr. Chairman, that we are involved in the defense complex of South Africa.

Mr. DREES. Let us bring it out through some of the questions that we would like to raise at this point.

In light of South Africa's policies and in view of the arms embargo, why do we have any military relations with South Africa? Why do we have a Defense attaché? We visited South Africa, as you know, and I asked that question. I could never get an answer.

What is the rationale for having a Defense attaché or any military attachés in a country where we have announced that we do not have any military involvement or the military involvement and interest is limited? They seem to be inconsistent.

Mr. NOYES. I view the presence of the defense and military attachés in South Africa as a necessary component of our diplomatic presence in that country to communicate, to understand what is happening in the country. To communicate with the various components of the society, it seems to me you need counterpart professionals.

The fact that we have attachés in the Soviet Union does not, to me, indicate that we have a cooperative military relationship with the Soviet Union. While this is perhaps not a very precise analogy—

Mr. DREES. I am afraid it is not, sir.

Mr. NOYES. But I think, in the same sense, we could say that the presence of attachés in South Africa does not indicate a cooperative relationship but rather indicates that we feel the need to understand what the military are thinking and doing in that country in order

to understand better totally the society, what is happening to it, where it is going, what its problems are, and that if we did not have attachés, we would be missing communication with an important group in the country.

Mr. DIGGS. You state that since 1966 no U.S. military visits have been made to Rhodesia or Namibia. What U.S. military visits have been made to South Africa?

Mr. NOYES. In terms of naval visits, we make port calls for emergencies, the latest being in March of this year for an appendicitis case of the U.S.S. *Charleston*, I believe. Apart from that, we have not made port calls to South Africa. In other words, we have not had military delegations visiting or that sort of thing.

Mr. DIGGS. How about Angola or any of the Portuguese Africa areas?

Mr. NOYES. In view of the geographic necessities, ships transiting from the Atlantic to the Indian Ocean, for fueling reasons, customarily stop at Mocmedes and Lourenco Marques.

Mr. DIGGS. You state there are items of a military nature which the Government of South Africa could purchase. Do any of these items include spare parts for radar equipment?

Mr. NOYES. May I provide that for the record. I don't have the specific information.

Mr. DIGGS. And if so, the justification of it. Does this include trucks or any vehicles?

Mr. BADER. We know of none; but, as you are aware, exceptions would include such items that were covered by contracts that were in existence before 1963, when the United Nations resolution was adopted.

Mr. DIGGS. Does it include—we might as well add to the list—radio communications equipment for use by the South African Government for armed forces?

Mr. BADER. Again we are not aware of that specific case. But we will be happy to check into it.

(The information referred to follows:)

SALES TO THE SOUTH AFRICAN MILITARY

In general the United States would not license the export of radar spare parts, military vehicles or radio equipment to the South African armed forces or security forces. Licenses might be issued for such exports to the South African Government or to private agencies for civilian use. Such applications would be dealt with on a case-by-case basis and, therefore, a categorical answer which would apply in all cases cannot be given.

Mr. DIGGS. What about any views that have been sought from your department that have a military implication—for example, what does your defense adviser say on radar?

Mr. NOYES. Mr. Chairman, in my experience, we have had no such request, but I think it would be very difficult to differentiate between a civilian commercial requirement for radar and a military one unless the apparatus itself specifically came under certain licensing agreements. But we have not, in my experience, had specific requests for comments.

Mr. BADER. If I could add, Mr. Chairman, that these are items that we generally treat in the so-called gray areas committee. There are

items that arise from time to time that have a dual use application; either it could serve civilian purposes or military purposes. These are reviewed by that committee against the basic nature of the equipment, and the consignees—that is, the eventual recipients of the equipment—so that if you were talking about a spare part for a radar set that was going to a South African airline, the Government's position might be one way; if it were going to the South Africa military per se, the views of the committee and of the Government might be different.

Mr. DIGGS. Well, the point I am trying to get at: We have a defense attaché over there; he is not just sitting there warming his seat. As you point out, you think that he can be useful to the mission in connection with counterpart contacts over there. What do you think these fellows talk about—the Defense attaché in the American Embassy when he meets with the South African military personnel? You do not think it is just polite conversation, do you?

Wouldn't you anticipate that they would get into conversations involving military matters, defense matters, perhaps sharing some of the latest developments of the military? You would not perhaps do that in Russia, because you consider that a hostile nation, but you do not consider South Africa hostile. So therefore wouldn't that be a natural part of the conversation, or what else would they talk about?

I have seen military attachés talk in these countries. They have lunch together; they have dinner together, they go to parties together, in and out of each other's homes. Of course they talk about these things. You don't consider that, by their very presence and the natural relationship which exists, this is not providing some defense-oriented benefits to that government?

Mr. NOYES. Mr. Chairman, I think it would be—

Mr. DIGGS. That is not very far-fetched, is it?

Mr. NOYES. The attachés would be under very strict instructions regarding classified information. While certainly the South African Government is not hostile or considered such, we do not have an alliance or agreement with them whereby we exchange classified information.

Under those conditions, I doubt very much if, in the course of developing a personal relationship, that our attachés are revealing information of military benefit as such to the South African military personnel.

Mr. DIGGS. Then you do have some guidelines for the Defense attaché; he operates under some guidelines; is that what you said?

Mr. NOYES. He certainly does.

Mr. DIGGS. What are the guidelines? Where does he draw the line?

Mr. NOYES. He, of course, reports to the Ambassador, and, as best defined, he is there to help the Ambassador; and he, the Ambassador, understands what is happening in the country, his part of the country being the military picture as he sees it.

Mr. DIGGS. Are you saying that the State Department draws guidelines for the Ambassador or the Defense Department draws it? Because we seem to be passing the buck in that statement. You seem to be passing the buck to the State Department, that they are responsible for the guidelines.

Mr. NOYES. In terms of the guidelines covering classified military information, he would receive that from the Department of Defense;

for the conduct of his daily activities, he would be responsible to the State Department.

Mr. DIGGS. I wonder what constitutes classified information in dealing with a nonhostile country. We had the Atomic Energy people up here this morning and, in view of that country's posture in terms of our policy, they would seem to have a very limited amount of classified information that they are not willing to share with their counterparts as far as atomic energy is concerned. Where is the line drawn as far as the military is concerned?

Mr. NOYES. Mr. Chairman, the lines are extremely precise on what kinds of discussions and how much they can discuss about certain weapons and things of that nature.

Mr. DIGGS. You said that you do not provide training to South Africans—training with a direct application to combat capability or enforcement of internal policy. What do you provide in terms of training? What are the facts and figures on training that is provided? Because that does not tell the whole story.

Mr. BADER. The Department of Defense is not providing training to South African military. There have been cases in the past where we have allowed South African military to enroll in the Industrial College of the Armed Forces correspondence courses. There have been cases where South African military have been permitted by the Department of State to come to the United States to attend courses provided at a university. But the Department of Defense does not provide any training at the present time.

Mr. DIGGS. What kind of courses are these?

Mr. BADER. I can think of one that a South African officer attended in California in air flight safety. In a course of this nature, air flight safety, this is really of benefit to more than just the individual involved.

Mr. DIGGS. We are aware of the fact that there are certain courses in the field of air safety to which we permitted South African military attendance.

Which airfields do our military use in South Africa?

Mr. BADER. If you are referring to the MAC flights, I believe they land at Johannesburg. I think very rarely would we have an aircraft go down to Cape Town.

Mr. DIGGS. Might we have that for the record—which airfields our military aircraft use.

(The information requested follows:)

U.S. MILITARY USE OF SOUTH AFRICAN AIRFIELDS

Our military aircraft make routine use of the Waterkloof (Pretoria) and Ysterplaat (Cape Town) South African Air Force Bases, the Jan Smuts International Airport at Johannesburg, and the Rand Airport at Germiston.

In addition our attache plane makes infrequent visits to a number of other South African air fields.

Mr. DIGGS. How about correspondence courses? Do you permit South African military personnel to take our correspondence courses?

Mr. BADER. As I said, we are not presently providing any Department of Defense correspondence courses. This is not to say that there might not be some kind of innocuous correspondence course that we might consider providing, but we are not providing it now.

Mr. DIGGS. When these South African military come to this country to take these courses, do they come under military or civilian auspices—in or out of uniform?

Mr. BADER. Mr. Chairman, they travel as citizens of their country on a visa. They are not under the auspices of the Department of Defense nor necessarily the auspices of any governmental agency. As I mentioned—I was referring to only one, at the University of California.

Mr. DIGGS. Regarding our cooperation with the South African development of military equipment, you refer to our recent testing of a surface-to-air missile developed by a French firm, the Cactus missile. Was this not done with financial support from South Africa?

Mr. NOYES. We do not have the details of that agreement. Mr. Chairman. We believe there was some South African financial participation in the venture, as my statement said, but, of course, our dealings were with the French.

Mr. DIGGS. Did we not purchase some of this equipment?

Mr. BADER. We provided money for the testing, because in the testing itself, of course, the missiles are expended; they are actually launched and observed, so that we had to buy some for those purposes. But this was from France, and South Africa was not involved in any of the negotiations.

Mr. DIGGS. Where was the weapon tested?

Mr. BADER. The weapons were tested at White Sands Missile Range in New Mexico and Fort Bliss, Tex.

Mr. DIGGS. What were the results of the tests? Are you at liberty to say?

Mr. BADER. No, I am not.

Mr. DIGGS. Are you at liberty to say whether you have plans to buy more of these weapons?

Mr. BADER. I would be at liberty, but we have no plans. This was the initial testing, and the decision has not been made as to whether further testing is justified or required.

Mr. DIGGS. Our Naval attaché at Cape Town, what does he concern himself with—the South African Maritime Information Center or the Atlantic Fleet Operation Control Center there—what is he there for?

Neither one of you gentlemen, I presume, have been to South Africa and seen these people in their natural habitat—these attachés.

Mr. NOYES. I have not.

Mr. BADER. I was considering following your lead and possibly going out there this winter.

Mr. DIGGS. You get some kind of reports from them presumably. Could you tell us about these reports? What is required?

Mr. NOYES. Mr. Chairman, the South African Chief of Naval Operations is, of course, at Cape Town. The attaché would concern himself with knowing as much as possible about the activities and interests of the South African Navy, and of presumably whatever other navies transit—as you say, all matters of maritime interest.

Mr. DIGGS. How many of these military attachés do we have in the rest of Africa?

Mr. BADER. We have, Mr. Chairman, a total of 31 officers and 45 enlisted men in 15 African countries. Would you like us to read them off?

Mr. DIGGS. Yes, I would like to hear them.

Mr. BADER. In the Cameroon, we have an Army attaché, an officer, and two enlisted men.

In Chad, we have two Air Force attachés and four enlisted men. The attachés to Chad are also accredited to the Central Africa Republic and Gabon.

In the Congo (K), we have three Army attachés and three enlisted men.

Mr. DIGGS. That is called Zaire now.

Mr. BADER. I beg your pardon; yes, it is. We have one Air Force attaché and one enlisted man. The Air Force attaché is also accredited to Rwanda and Burundi.

In Ethiopia, we have one Army attaché, one Air Force attaché, and three enlisted men.

In Ghana, we have one Army attaché and one enlisted man.

In the Ivory Coast, we have one Army attaché and one enlisted man. The Army attaché is also accredited to Dahomey, Niger, and Upper Volta. We also have in the Ivory Coast an Air Force attaché and one enlisted man. The Air Force attaché is also accredited to Dahomey, Niger, Upper Volta, Ghana, and Togo.

In Liberia, we have two Navy attachés and four enlisted men. The Naval attaché in Liberia is also accredited to the Ivory Coast, Sierra Leone, and Ghana.

In the Malagasy Republic, we have two Air Force attachés and four enlisted men.

In Malawi, we have an Army attaché and two enlisted men. The attaché is also accredited to Zambia.

In Morocco, we have two Navy attachés and four enlisted men. We have an Army attaché and an Air Force attaché.

In Nigeria, we have two Army attachés and two enlisted men.

In Senegal, we have one Navy attaché and two enlisted men. The Navy attaché is also accredited to the Gambia and Malawi.

In Somalia, we have one Army attaché and two enlisted men.

In South Africa, we have two Air Force attachés and four enlisted men. The Air Force attaché is also accredited to Lesotho and Swaziland. We have two Navy attachés and two enlisted men. We have an Army attaché and one enlisted man. The Army attaché is also accredited to Lesotho and Swaziland.

In Tunisia, we have an Army attaché and two enlisted men.

Those, Mr. Chairman, are the African countries where we have attaché officers.

Mr. DIGGS. Have your attachés ever visited Namibia?

Mr. NOYES. Mr. Chairman, not since about 1966.

Mr. BADER. Not since the United Nations resolution.

Mr. DIGGS. There have been reports about a South African-Argentinian-Australian South Atlantic defense organization. Do you know anything about that?

Mr. BADER. I have seen reports of that in the press, and that is all I know.

Mr. DIGGS. Our Government is not encouraging or discouraging such an alliance?

Mr. BADER. Our Government has not been involved one way or the other, Mr. Chairman.

Mr. DIGGS. In what way does South Africa cooperate with NATO?

Mr. NOYES. Mr. Chairman, there is no cooperation between NATO and South Africa of which we are aware.

Mr. DIGGS. I am curious about our arrangements with South Africa for the exchange of maps and hydrographic charts. If these are readily available by purchase, why don't we let them buy them? Why do we have to be involved with them in transactions?

Mr. BADER. It is a normal channel. As you say, it probably could be done on the open market. But it is just perhaps easier; it facilitates the acquisition of the maps.

Mr. DIGGS. How about the collection of geodetic information, or are these joint projects?

Mr. BADER. No, Mr. Chairman, they are not joint projects.

Mr. DIGGS. So that there is no cooperation required on the part of the South African Government in connection with this matter?

Mr. BADER. That is not quite true in the sense that if you are talking about a project that would require a U.S. Navy airplane to come down and operate for a couple days out of South Africa, in the collection of that information, that, by definition, would require the cooperation of the South African Government.

Mr. NOYES. But there is no participation of South Africans in the exercise.

Mr. DIGGS. Tell us something about the Air Force tracking station. You indicated there were a master sergeant and some other employees.

Mr. NOYES. Mr. Chairman, there is a master sergeant and three U.S. civilian citizens, nine South African whites, and two South African blacks.

Mr. DIGGS. And there is just one American involved?

Mr. NOYES. One American military and three civilians.

Mr. DIGGS. And three civilians. These are all white, I assume.

Mr. NOYES. That is correct.

Mr. DIGGS. What are their duties? Is there some kind of particular specialty that they require?

Mr. BADER. One civilian is the Pan American manager, one is the RCA manager, and the third is associated with the Navy's project on measuring the gravitational pull in that area. The master sergeant really provides liaison between the Air Force and the Embassy and the station.

Mr. DIGGS. The South Africans—you say you have eight whites and two blacks. What do they do?

Mr. NOYES. The white South Africans—five are diesel generator mechanics. There are two black laborers, one of whom is a grounds-keeper and the other of whom is a driver.

Mr. DIGGS. When you began, at least, you alluded to certain conditions of facilities up there. Am I correct in recalling, you said there are not any facilities, so therefore we do not get into the question of where these blacks eat and where they sleep or what they do at lunch-time? Is it like NASA, where the blacks eat under the trees outside and the whites eat inside, or how do you handle the situation?

Mr. NOYES. There are no eating facilities at the station itself. There are no sleeping arrangements or any of that type of thing.

Mr. BADER. There is a latrine that is used by blacks and whites indiscriminately, and there is a drinking fountain that is used by blacks and whites indiscriminately.

Mr. DIGGS. And the wage level for the black South Africans that are working out there, who determines that? Does it follow the line of the apartheid or what?

Mr. NOYES. As I understand it, Mr. Chairman, these are determined by the prevailing rates, diesel generator mechanics as well as for the laborers. As I understand it, they are on the high side of the prevailing rates in both cases.

Mr. DIGGS. Now, you have alluded here to an agreement with South Africa on this tracking facility. Could you provide for the record a copy of this agreement and any related contracts?

(This agreement is confidential and is retained in the files of the subcommittee.)

Mr. NOYES. May I look into that and see what may be provided.

Mr. DIGGS. Also the contract between Pan-American and RCA for the operation of the station.

Mr. NOYES. Yes, sir.

Mr. DIGGS. What were the activities of the station before the reduction that you have talked about?

Mr. NOYES. Mr. Chairman, the station is restricted to support of testing and development of missile and space vehicles.

Mr. BADER. At its inception, it was the last station on the eastern test range which the Air Force used in the testing and development of its missile program. The tracking station at one time had as many as 36 U.S. employees and 21 South Africans.

Over the last 2 years, the requirement of the Eastern Test Range missile and space program has diminished considerably, and this has allowed us, Mr. Chairman, to reflect this change in requirement in the personnel that we have at station 13.

Station 13, however, may still periodically be called upon in this reduced program. We anticipate about three times a year. The station currently also provides support for the Navy program of measuring the earth's gravitational pull. So primarily those are the functions at the present time.

Mr. DIGGS. Am I correct in recalling the statement that the South African Government is utilizing a U.S. military station through the CSIR for weather research and through their postal department for radio communication?

Mr. NOYES. The postal department, during this period of phase-down, is being permitted to utilize facilities that are there, for the purpose of its own communications. They have responsibility for telegraphic as well as postal communications. So they are permitted to use some facilities.

In the case of the Council for Scientific and Industrial Research, a component group of that, which is the Air Pollution and Meteorological Research Organization, is conducting weather research, meteorological research. None of their people are there. They come and check intermittently the facilities they have put in. This activity does not have a military significance.

Mr. DIGGS. Do you anticipate that any aircraft carriers are going to be visiting South Africa?

Mr. NOYES. Mr. Chairman, there is no present intention for visits by U.S. aircraft carriers.

Mr. DIGGS. Of course, there are two schools of thought within your agency about this. I just am curious as to whether or not any minds

are being changed relative to these visits. The military is constantly pushing for it, I am sure.

Mr. NOYES. Mr. Chairman, since the requirement for carriers to transit from the Atlantic through to Vietnam or Southeast Asia has diminished, it seems to me there is much less likelihood of a requirement for stops at South Africa.

Mr. DIGGS. Let us turn a little bit toward the Portuguese relationship with the United States. You state we prohibit export of arms for use by Portugal and Africa. Does this mean we permit the sale of nonmilitary equipment that is not of a weapons nature to the Portuguese Armed Forces for their use that might be used in Africa?

Mr. NOYES. To the Portuguese Armed Forces?

Mr. BADER. On items of a military nature, we do have an understanding with the Portuguese Government that they will not be used in the overseas territories. On a commercial item that had no obvious military application, that presumably could be sold and might be used for civilian purposes in Portuguese territories. Our embargo applies only to items of a military nature.

Mr. DIGGS. We provide certain training opportunities for Portuguese, do we not?

Mr. BADER. Yes, we do, Mr. Chairman.

Mr. DIGGS. Do you have the facts with respect to that? How many have taken advantage of it, when, where? Could we have a full report on that for the record?

Mr. NOYES. During the current fiscal year, there are some 46 Portuguese military personnel, mostly from the Portuguese Navy, who have been receiving training in the United States, primarily in surface ship operation. There are seven Army and 14 Air Force officers from Portugal receiving training this year. For the Army, there is one in a command and general staff school, five in senior officers' orientation course, one language instructor. For the Air Force, there is one in pilot training, two in basic survival, two in flight safety, one in communications and electronic staff officers' training, one in the Air Command and Staff College, one squadron officer, two in precision photography service, one in physiological training, one on an orientation training tour, two for technical instruction.

Mr. DIGGS. A couple of them are in basic survival. What would they be taking that for? Precision photography—where would they use that? Portugal is not at war with anybody, are they? Why would they need that training unless they were being used in the African territory?

Mr. NOYES. This training would be in the course of NATO preparedness, as for all NATO countries, although they may not have a particular contingency at the moment requiring certain training. These training programs are toward future contingencies.

Mr. DIGGS. Earlier in your statement, you dismissed rather lightly allegations that are well known about this problem of defoliants by simply saying they must get them from private sources because, as far as you have been able to determine, they have not gotten them through any slipshod monitoring system here.

I was curious as to what kinds of assurances, what is the basis of your confidence that these defoliants have not come through our

States or whether or not they have been used. Have you any information about that?

Mr. NOYES. We have no direct information of their being used. Our confidence stems first from a careful check. Second, in my own mind, from the feeling that the Portuguese would have no motive. Such a purchase could entail simply buying these things easily in Europe or in the open market in the United States without stirring up problems for themselves.

Mr. DIGGS. Is there any meteorological station in South Africa?

Mr. NOYES. Not under our purview.

Mr. BADER. Station 13 provides some services in that regard; but other than station 13, the Department of Defense has no other station.

Mr. DIGGS. Does our Government cooperate with South Africa in connection with expeditions to the Antarctic, the South Pole?

Mr. BADER. That is an area we are not aware of. I assume you are talking about a scientific basis. If you are talking about a military basis, the answer is no.

Mr. DIGGS. Does any NATO country hold exercise with South Africans?

Mr. BADER. We are aware of no NATO exercises. That is out of the NATO geographic area of cognizance. I am aware of no NATO exercises ever held in that area.

Mr. DIGGS. Are you aware of any military installations in the Caprivi Strip?

Mr. NOYES. I am not, Mr. Chairman.

Mr. DIGGS. Are you aware of any military cooperation between Portugal and Rhodesia and South Africa?

Mr. NOYES. I am not aware of any formal relationships.

Mr. DIGGS. Are you aware of any meetings, planning sessions, between the security people of those three countries?

Mr. NOYES. No, I am not. I understand there are unconfirmed reports of such meetings, discussions.

Mr. DIGGS. Are you aware about any troops, equipment, or bases that South Africa would have outside of this country and Angola, Mozambique, and Rhodesia?

Mr. NOYES. I am not aware.

Mr. DIGGS. You have no awareness about that at all?

Mr. NOYES. There are no reports.

Mr. DIGGS. Not officially? You do not have any official reports?

STATEMENT OF LYNFORD A. LARDNER, STAFF ASSISTANT, AFRICA REGION, ISA

Mr. LARDNER. Correct.

Mr. DIGGS. Would the reports from your Defense attaché turn up anything like this? That would seem to be a natural item in any reporting system from the Defense attaché—whether or not South African troops have been deployed outside the country.

Mr. BADER. If there were such incidents, they likely would be reported.

Mr. DIGGS. You are not at liberty to say this publicly? I am just trying to understand the nature of your answer. Are you saying you know about it but you are not able to say publicly, we will talk about it in executive session?

Mr. NOYES. This is not the case, Mr. Chairman.

Mr. DIGGS. You are saying you do not know anything about it at all?

Mr. NOYES. There have been these unconfirmed reports of discussions. There are rumors reported of this sort, but we are not convinced it is anything more than rumor.

Mr. DIGGS. We maintain a military advisory group in Lisbon, is that correct, of 21 people? Am I correct in that?

Mr. NOYES. Yes, sir. These are people to whom I referred that are responsible for checking end-item use of NATO equipment.

Mr. DIGGS. General Goodpasture stated that one of the functions of this group was to permit training of key Portuguese military personnel. What did he mean by that?

One of the witnesses before this committee stated that in fiscal year 1968, for example, 107 Portuguese officers training in the United States; fiscal year 1970, 33 Portuguese officers trained in the United States; fiscal year 1968, expenditure for this item, \$120,000; fiscal year 1970, expenditure for that item, \$88,000. Is that correct?

Mr. BADER. We don't have those figures with us, Mr. Chairman. We can certainly verify those for you.

Mr. DIGGS. Would you verify those for the record.

Mr. BADER. Certainly.

Mr. DIGGS. We would like to get complete figures for all the training of Portuguese officers in the United States.

Mr. BADER. Mr. Noyes gave you the complete breakout for fiscal year 1971. Did you want more than that?

Mr. DIGGS. We are particularly interested in the years of 1962 on. Anything that would bring it up to date would be appreciated. This should include figures for those that were trained under either governmental or private auspices, either in or out of uniform, if you have that available.

Mr. NOYES. We will provide that.

(The information requested follows:)

PORTUGUESE MILITARY PERSONNEL TRAINED UNDER U.S. GOVERNMENT AUSPICES

Fiscal year	Number of students								Total student training cost	
	Officers				Enlisted					
	Army	Navy	Air Force	Total	Army	Navy	Air Force	Total		
1963 ¹									59	
1964	21	18	3	42	20		1	21	63	48,299
1965	45	7	12	64	7			7	71	62,289
1966	36	9	1	46	2			2	48	26,532
1967	2	8	1	11	4			4	15	36,734
1968	35	11	1	47	2		52	54	101	120,147
1969	31	14	7	52	81			81	133	118,807
1970	38	13	2	53	36			36	36	136,165
1971	37	14	49	100	4		1	5	105	197,940
1972	33	19	34	86	10		1	11	97	252,550

¹ Training costs, exclusive of MAAG support costs and breakdown of trainees by rank and service not available for fiscal year 1963.

Mr. DIGGS. Is it within present policy, to your knowledge, to sell to South Africa locomotives, trucks?

Mr. BADER. These are items that would not come under our purview.

Mr. DIGGS. Computers, advanced telecommunications equipment, spare parts?

Mr. NOYES. Computers and advanced telecommunications equipment would, perhaps, be in that category of the gray area, but the locomotives or trucks, unless they were specifically military vehicles, would not.

Mr. DIGGS. Of course, we do sell these items, and they are considered to be of possible strategic value. That is why we do not sell them to China, and the question is: Why do we sell them to South Africa in view of our arms embargo?

Mr. NOYES. Again, it is difficult to comment, as these cases have not come up since I have been on this assignment. But they would be examined from the standpoint of military significance at any time they did.

Mr. DIGGS. On April 17 of this year, the Johannesburg Star reported that Mrs. Beech of the American Beechcraft Corp., stated that their company would now sell to South African defense forces American aircraft for reconnaissance and training purposes. Do you know anything about that?

Mr. NOYES. There has been discussion. I know of the possibility of selling unarmed civilian executive jet-type or executive transport aircraft to the South African Government, but as far as I know, no decision has been made on this.

Mr. BADER. We do not have any application that I am aware of for such sale.

Mr. DIGGS. You do not have any correspondence with the Beech Aircraft Co. on this subject?

Mr. BADER. We do not have an application for Beech Aircraft on the subject.

Mr. DIGGS. Not necessarily an application but correspondence, maybe leading up to an application.

Mr. LARDNER. There is a report, Mr. Chairman, after this reported statement that what Mrs. Beech meant to say was: She hoped they would be able to sell to South Africa.

Mr. DIGGS. What was the position of the Department in the policy review that led to the decision that our Government might be prepared to consider licensing the executive civilian type of aircraft as opposed to the previous administrative decision on that question?

Mr. BADER. Mr. Chairman, I think you are referring to a speech that Assistant Secretary of State David Newsom gave in Chicago last year. I think he was using that to illustrate the equities, the search for the equities involved in trying to come to judgments on what could or could not be sold to South Africa.

As I recall the context, he said that we would not sell fighter aircraft to South Africa, for example, but we might consider the sale of unarmed, executive-type aircraft.

Mr. DIGGS. That is very significant, because it is my general understanding that there is more private aircraft per capita in that general area perhaps than any other place in the world. And the reason for it is that it is part of the defense system. You go through Rhodesia or you go up on these South African plantations and you see these little executive aircraft sitting out there on private landing strips. They are not sitting there for pleasure.

It is ludicrous to make a reference to this aircraft as if it is just a private medium for pleasurable travel. This is part of the defense

system. Just like they have trained every man, every white man and every white woman, to shoot a gun. They did not do that so they could go out and shoot rabbits. This is part of the defense system.

Mr. BADER. You are well aware of the great distances involved, not only in South Africa but in many areas in Africa. The transportation systems—the roads, the trains—are not as abundant and as conveniently routed as they are in many other areas of the world.

I would suggest that aircraft transportation, small privately owned, aircraft transportation is very convenient and very necessary in many instances as a mode of transportation, not only in South Africa but in other areas of Africa as well.

Mr. DIGGS. Has there been some policy developed regarding what kind of aircraft you are prepared to sell South Africa?

Mr. BADER. Mr. Chairman, the items that we are prepared or not prepared to sell South Africa are addressed on an ad hoc, periodic basis as applications are raised with the U.S. Government. This is a subject that is under continuous review. I think this is the point that Assistant Secretary Newsom was trying to make, that we do have these areas that we call gray areas where we do have to address these dual-use, civilian-military type of items that do not fall neatly into one categorization or the other.

Mr. DIGGS. Would you sell aircraft to the South African defense force, for example?

Mr. BADER. I don't think we could go beyond what Assistant Secretary Newsom said—that we would be willing to consider the sale of such unarmed, executive-type aircraft to the South African military.

Mr. DIGGS. And to the South African police force you would sell?

Mr. BADER. That is speculating on something that would depend on a variety of factors.

Mr. DIGGS. You have not sold any in either one of these two categories?

Mr. BADER. To my knowledge, we have not. But again, Mr. Chairman, I hope you understand at this point in time this is a hypothetical discussion. I would like to make that clear.

Mr. DIGGS. We have seen hypothetical discussions converted into reality in many instances. Once the guidelines are there, changes certainly take place, sometimes too late for any protestations to intervene.

What does it take to convert these private aircraft to military?

Mr. BADER. That would depend on what you wanted to do with the aircraft in a military way. Any export license, again hypothetically, that would be issued for an unarmed aircraft, presumably that restriction would be in the export license. That would be standard procedure as far as the Department of State is concerned.

Mr. DIGGS. Are you aware of any air commando group in South Africa composed of South African civilians?

Mr. BADER. No, sir, I am not personally aware of that.

Mr. DIGGS. That fly Pipers and Cessnas? You are not aware of that?

Mr. BADER. No, sir.

Mr. NOYES. No, sir.

Mr. DIGGS. What about helicopters?

Mr. BADER. In what context, Mr. Chairman?

Mr. DIGGS. Would we permit helicopters to be sold to South Africa?

Mr. BADER. To the South African military?

Mr. DIGGS. Any category.

Mr. BADER. I think again, Mr. Chairman, that would depend on who the recipient would be. I would not care to speculate.

Mr. DIGGS. The military, the police, either one of those two.

Mr. BADER. I would speculate we probably would not.

Mr. DIGGS. Counsel has some questions now.

Mrs. BUTCHER. Is military aircraft now considered to be a classified gray area, so that when Secretary Newsom made this speech in Chicago and said, "We are prepared to consider it," he means that it is within present administration policy?

Mr. BADER. I know of no gray area guidelines that are not classified. I think that since the gray-areas committee is really, as you well know, a State Department committee—we are only invited because of our military expertise in helping them come to judgments on the military implications of certain equipment—that this is a matter that might be more appropriately raised with them.

Mrs. BUTCHER. Do you say you have had no correspondence with the Beech Aircraft Corp. or with Mrs. Beech? Have you had correspondence with any of the American manufacturers of aircraft with regard to the sale of executive aircraft to the South African Government?

Mr. BADER. When you say "we," I assume you mean the entire Department of Defense.

Mrs. BUTCHER. The U.S. Government.

Mr. NOYES. That would be difficult for us to answer. I assume there was correspondence with the Department of Commerce or State rather than with the Department of Defense.

Mr. BADER. You are talking about a civilian aircraft, and normally they would not come to us.

Mrs. BUTCHER. To go back to the operation of Station No. 13, you said that the wages are on the high side. May the subcommittee be supplied with the actual data on the wages and the other fringe benefits of the various employees?

Mr. NOYES. We will provide that. I believe I said "on the high side of the prevailing rate."

Mrs. BUTCHER. We would like to know exactly what that is.

(The information follows:)

WAGES AND FRINGE BENEFITS

For those currently hired on monthly basis:

Base accountant-----	\$785
Supply superintendent-----	728
Technicians (RCA)-----	618

For those currently hired on hourly basis:

Diesel generator mechanics-----	2.52
Laborers-----	.63

Workman's compensation is paid in addition to the salaries. Employees are provided vacations and sick leave in accordance with South African laws. They are also allowed twelve holidays per year and provided transportation to and from work. PanAm employees are entitled to a reduction in air travel rates on PanAm aircraft and may purchase stock at preferential prices.

Mrs. BUTCHER. You said you were not sure as to the guidelines or as to whether or not we sell the radar and trucks and radio equipment.

When you are going back over your transcript, could you verify that information for us?

Mr. NOYES. Yes, we will.

Mr. BADER. I think our point was: We were not aware of these specific cases. But again, we will be delighted to see what cases there might be.

Mrs. BUTCHER. In your statement, you referred to our sales to South Africa that would ordinarily be in violation of the embargo except that they come under the prior-contracts provision. Do we have any of those sales going on now?

Mr. NOYES. We have provision of spare parts for equipment that was sold prior to that point. In other words, there are no new end items.

Mrs. BUTCHER. May we have documentation on the sales and services which have been provided under this contract exception since the institution of the embargo?

Mr. BADER. We can provide that, Mrs. Butcher, but again, as you are aware, we are not talking about a Department of Defense sale. We are talking about something that is controlled by the Bureau of Census and the Department of State, but we will be happy to ask them on your behalf for this information.

(The information requested follows:)

CONTRACT EXCEPTION SALES

Under contracts made by the South African Defense Forces prior to the adoption of the U.N. Arms Embargo, follow-on sales have been approved in two cases.

Subsequent to 1963, Lockheed Aircraft Corporation has made sales to the South African Defense Forces of spare parts, associated ground equipment, technical data and repair services for C-130 aircraft for a cumulative total through CY 1971 of \$23,683,000.

In connection with a pre-embargo sale of some torpedoes, two small sales of spare parts and technical data totalling \$44,474, have been made between 1963 and 1967.

Mrs. BUTCHER. At the beginning of your statement, you referred to the geographical situation of South Africa. What is the role of South Africa within our defense structure?

Mr. NOYES. You say, "within our defense structure." There is no role in that formal sense which you imply.

Mrs. BUTCHER. Do we have available documentation on the supply of military equipment to South Africa by NATO countries? It is frequently alleged that South Africa, in fact, receives just about all of its military equipment from NATO countries. Do we have documentation on that?

Mr. BADER. That would be classified, Mrs. Butcher—what we would have—and it would not necessarily be complete.

Mrs. BUTCHER. You also stated that we do not sell arms to Portugal without getting assurances that it will not be used in the Portuguese territories in Africa. Do we sell spare parts without getting such assurances? Are there items that will be used by the military which we feel do not come within this definition of arms?

Mr. BADER. Are there items which will not be—

Mrs. BUTCHER. Which will be used by the military which we sell without getting assurances.

Mr. BADER. By "we," again, you mean the Department of Defense?

Mrs. BUTCHER. The U.S. Government. I am asking about them since they are items to the military.

Mr. BADER. Normally, I would think not, Mrs. Butcher, but again you are asking a question that goes beyond our purview, quite honestly.

Mrs. BUTCHER. We have, as has been brought out, some Portuguese officers training in the United States in various courses. Is it possible to find out whether any of these officers, after completion of the course, have tours of duty in the African countries—in Angola and Mozambique?

Mr. BADER. I think that would be very difficult, Mrs. Butcher. If it is your wish, we will try to find out.

Mr. NOYES. It would be a rather difficult question for the Portuguese Government to answer.

Mr. DIGGS. Isn't that rather obvious? They have a rotation system for enlisted personnel that are sent directly into the African territories. One would presume that their officer personnel would also be rotated in there.

Mr. BADER. I think that is a reasonable assumption, Mr. Chairman. In fact, I would think it is extremely likely. We would have no prohibition on U.S.-trained Portuguese officers going where their country sent them.

Mr. DIGGS. I think the point that is made by implications of that question is that once we train these people and they end up in Africa, this would negate the pronouncement that we are not contributing to the military assistance of Portugal in their African territories.

Mr. BADER. But, Mr. Chairman, the expertise that we are exposing them to in their training in this country is related to missions other than the type of combat missions that they would be performing in the Portuguese territories. But they are still the same officers, that is right.

Mr. NOYES. The assumption behind the NATO effort is for a different and more sophisticated type of warfare than they are encountering in Africa.

Mr. DIGGS. It is just more or less repeating myself in different words. There is obviously a great deal of fallout from the training they get through American largess that ends up in the African territories.

Mrs. BUTCHER. Have we given any training to guerrilla warfare experts from Portugal; or have we given any training in that category?

Mr. NOYES. They have been specifically excluded from that training.

Mr. BADER. Recently, in the last few years. There may have been some before then.

Mr. DIGGS. A course in basic survival would go to that?

Mr. BADER. I think that name is misleading. It is in the context of air force training, and I would presume, in that context, we are talking about survival from a crash, not in a guerrilla warfare context.

Mr. DIGGS. Just one little point of clarification here, and that is in connection with the question about the role of South Africa within our defense structure. I think your response was that there was not any role that South Africa—its location—in connection with the Cape or relative to the Indian Ocean defense problems, has no meaning in terms of the U.S. defense mission in that part of the world.

Mr. NOYES. I think, if I understand Mrs. Butcher's question, it was in terms of a formal role in our defense structure, which I said did not exist. At the same time, if looked at in the long range in terms of contingencies for a global or large conflict of some sort. The geography of South Africa would be clearly of significance to Western Europe.

Mr. BADER. I think this was the point Ambassador Stevenson was trying to make in 1963 with the U.S. position on the arms embargo—that there could arise situations in the future, within the interests of the United States for collective defense, that might involve that area. But it should not be construed, as a result of that, there is any cooperation with the South African military in that context.

Mr. DIGGS. You do not consider the South Africa defense complex your proxy in that area?

Mr. BADER. Our proxy or our surrogate?

Mr. DIGGS. Your agent in that area.

Mr. BADER. I don't think that is an official view of the Department of Defense.

Mr. NOYES. I have never heard that view expressed in the Pentagon.

Mr. DIGGS. I am not at liberty to say why I pursue that. I happen to have seen a chart at a briefing which would indicate that that area was considered quite important, but I won't elaborate on that. But it was by your department in New York, the military attaché at the U.N.

But the question was rather simple, just whether or not, from the Defense Department standpoint, we consider South Africa part of our strategic interests in that area. Because that would have a lot of meaning with respect to a lot of our policies regarding South Africa that would overcome our abhorrence of apartheid and all the rest, and it would also explain some of the inconsistencies of our pronouncements before this committee and elsewhere and yet, on the other hand, our assistance, directly and indirectly, or the continuance of our assistance, directly or indirectly, to that country.

Mr. BADER. I think Mr. Noyes tried to make clear, in his opening remarks, that the Defense Department does view the South African area of strategic importance. If you are trying to link the importance that we attach to that area as being an influence on present U.S. strategic policy, I think that is not correct.

Mr. DIGGS. Thank you, gentlemen. The subcommittee stands adjourned.

(Whereupon, at 4:30 p.m. the subcommittee adjourned, to reconvene at the call of the chair.)

U.S. BUSINESS INVOLVEMENT IN SOUTHERN AFRICA

MONDAY, DECEMBER 6, 1971

HOUSE OF REPRESENTATIVES,
COMMITTEE ON FOREIGN AFFAIRS,
SUBCOMMITTEE ON AFRICA,
Washington, D.C.

The subcommittee met at 1:20 p.m., in room 2200, Rayburn House Office Building, Hon. Charles C. Diggs, Jr. (chairman of the subcommittee) presiding.

Mr. Diggs. The subcommittee will come to order.

The hearings of the Subcommittee on Africa on U.S. business involvement in southern Africa are resumed. Today our concern relates to the facts on the labor situation in that area, with particular emphasis on South Africa and the implications of apartheid for the labor system.

We have asked the Department of Labor to give us a full statement on all aspects of the employment and labor situation in these areas (see p. 354 of the appendix for Exchange of letters between Chairman Diggs and the Department of Labor regarding the Department's responses to inquiries made by the chairman at the time of the Department's appearance before the subcommittee on December 6, 1971) including—

A statement of the laws of South Africa, Angola, and Mozambique relating to labor, and of those affecting Namibia;

Labor statistics, that is, figures on employment, facts on the practices of U.S. firms, and data on labor and employment conditions generally in South Africa, Namibia, Angola, and Mozambique;

Information on regulations and laws affecting U.S. firms in each of these areas;

Figures comparing the income, wages, and employment of blacks, coloreds, and whites for each of these areas, and also a statement of percentages that this represents of the total income and of the total employment for each area;

The question of forced labor in South Africa and in Namibia, with a discussion of the implications of the forced labor provisions of the ILO and also 19 U.S.C. 1307; and

The question of convict labor in South Africa and Namibia and the implications of 19 U.S.C. 1307.

We will also hear two private witnesses before beginning the discussion period, because their presentations will focus on (1) the type of labor system in South Africa, and (2) the statutory duty of the U.S. Government with respect to the importation of goods produced by forced, indentured, or convict labor.

Our first witness will be the Honorable Donald M. Irwin, Deputy Under Secretary for International Affairs, Department of Labor, who has held this position since September of 1971 and has a long and distinguished career in this general area of labor relations following the completion of his education at the Harvard University Graduate School of Arts and Sciences.

Without objection, his distinguished background will be entered into the record.

Mr. Secretary, you have a prepared statement and you may proceed with your statement.

STATEMENT OF HON. DONALD M. IRWIN, DEPUTY UNDER SECRETARY FOR INTERNATIONAL AFFAIRS, DEPARTMENT OF LABOR

BIOGRAPHY

Mr. Donald M. Irwin, who was appointed Deputy Under Secretary of Labor for International Affairs by Secretary of Labor J. D. Hodgson in September 1971, directs the activities of the Labor Department's Bureau of International Labor Affairs.

Mr. Irwin came to the Labor Department with an extensive labor-management relations background in industry, government, and higher education. Most recently he was employed at the Michigan State University School of Business Administration in East Lansing.

From 1968 to 1970, Mr. Irwin, 46, was an official with Deere and Company, Moline, Illinois. He was responsible for foreign labor relations, labor economics in the U.S., and some Federal government labor relations.

During the period 1957-1968, Mr. Irwin was employed by the Chrysler Corporation in Detroit. He served as Manager for Personnel Research and Planning and had primary responsibility for personnel research and coordinating national labor negotiations. Other duties included long range personnel planning, budgets, corporate personnel procedures and statistics.

For two years, 1955-57, Mr. Irwin worked at the Labor Department in Washington as Assistant to the Deputy Assistant Secretary for Standards and Statistics. In this position he reviewed policy matters relating to the Bureau of Labor Statistics, Wage, Hour and Public Contracts Division, Labor Standards Bureau, and Bureau of Employees Compensation.

Earlier, he was employed as Personnel Manager for Hawaiian Airlines in Honolulu and on the staff of the Institute of Industrial Relations, University of California at Berkeley.

Mr. Irwin graduated from the University of California at Berkeley in 1945 and attended the Harvard University Graduate School of Arts & Sciences where he passed his orals for the Ph. D. degree in Business Economics.

From 1960 to 1970, he served on the Business Research Advisory Council of the Labor Department's Bureau of Labor Statistics. He served as a member of the National Executive Board, Industrial Relations Research Association, 1968-1970, and is currently a member of the National Advisory Committee of the Leonard Davis Institute of Health Economics of the University of Pennsylvania. Mr. Irwin is also a member of the American Economics Association and the American Statistical Association.

Mr. Irwin is married to the former Margaret Julia Strong of Ventura, California.

Mr. IRWIN. Thank you very much, Mr. Chairman.

My name is Donald M. Irwin, Deputy Under Secretary for International Affairs of the U.S. Department of Labor. I am testifying on behalf of the U.S. Department of Labor.

The Department of Labor is happy to cooperate with this subcommittee in its hearings on U.S. business involvement in Southern Africa and to contribute such information as has been developed and consolidated within the Department.

I wish to be as responsive as possible to your chairman's letter of October 15, 1971, which requested our appearance. In this letter, we were asked specifically to supply information concerning: Laws relating to labor, including laws affecting U.S. firms; relevant labor statistics such as figures on employment; information concerning employment conditions and employment practices of U.S. firms; figures and percentages comparing income, wages, and employment of blacks, Coloureds, and whites; forced labor and the implications of ILO provisions and 19 U.S.C. 1307; and convict labor and the implications of 19 U.S.C. 1307.

The scope of the Department's responsibilities with respect to southern Africa is quite limited. We are not involved in any operating programs in southern Africa, nor do we have personnel assigned there. Whatever data or statistics we have relating to this area come entirely from reports and documents initiated elsewhere and made available to us.

We utilize a multiplicity of sources, including public and private groups both at home and abroad, United Nations agencies, the Government of South Africa, and the U.S. Department of State.

The Labor Department's involvement in international affairs is centered in two major units—the Bureau of International Labor Affairs and the Bureau of Labor Statistics. Although the Manpower Administration's International Manpower Institute has trained Africans, including citizens from Botswana and Swaziland, it has had no dealings with those countries of southern Africa in which the subcommittee expressed interest.

One of the chief responsibilities of our International Labor Affairs Bureau is the marshaling of Labor Department resources in support of U.S. foreign policy objectives and U.S. goals in those areas. Insofar as Africa is concerned, these program objectives deal principally with that Continent's developing countries.

The Republic of South Africa is not considered to belong in this category, and consequently our Bureau has had little contact in that country.

The other pertinent unit of the Department is the Division of Foreign Labor Conditions of the Bureau of Labor Statistics. This unit collects, analyzes, disseminates, and maintains information on labor and socioeconomic conditions and developments in foreign countries.

The Division of Foreign Labor Conditions is staffed by 20 professionals, two of whom specialize in Africa. With over 160 countries to be covered, this Division must concentrate its limited resources in those areas where there is the most demand for the particular kind of services it provides.

It has been possible to devote only limited time to the collection and analysis of data concerning South Africa. However, the Director of the Division, Mrs. Juliet Kidney, expects to visit southern Africa early next year for the purpose of collecting data and information in the labor and manpower field.

As a matter of fact, Mrs. Kidney had hoped to visit southern Africa earlier this year, but our Embassy suggested that she postpone the visit until a later date when its workload was not so great and the Embassy staff could devote more time to assisting her.

Within our limitations of staff and resources, however, the Department has assembled some information on South African labor legislation and statistical data on manpower and other aspects of the South African labor scene. The material we are submitting consists of two parts, one dealing with South African legislation involving labor and the other containing statistical data.

The legislative section contains, in annotated form, the major laws affecting the labor force, including both the laws that are officially designated by the South African Government as "labor laws" and those which, although not designated as such, have direct bearing on the labor force.

This legislative material is divided into three broad categories, entitled as follows:

- I. Laws affecting the population and labor supply;
- II. Laws affecting employment practices;
- III. Laws affecting industrial relations.

This legislative material was prepared from documents in the files of the Bureau of Labor Statistics and in the Legislative Reference Section of the Library of Congress. We cannot warrant the comprehensiveness of the list nor the accuracy of the comments on the laws.

The statistical section contains the following tables:

1. "Population by Race and Area Classification, 1971."
2. "Economically Active Population by Race and Sex, 1970."
3. "Percent Distribution of Labor Force by Race and Economic Activity, 1970."
4. "Average Nonagricultural Employment in Selected Activities by Race, 1970."
5. "Total Employment in Registered Factories by Race, Sex, and Geographic Area, December 31, 1969."
6. "Total Employment and Earnings and Average Monthly Earnings in Selected Activities by Race, March 1971."
7. "Total Employment and Earnings and Average Monthly Earnings by Race and Branch of Manufacturing, May 1971."
8. "Total Employment and Earnings and Average Annual Earnings by Race and Type of Mining, 1970."
9. "African Employment by Economic Activity and Nationality, 1970."
10. "Registered Unemployment by Race, Sex, Occupational Groups, and Geographic Region, April 1971."
11. "Average Weekly Hours of Work in Manufacturing and Construction by Race, December 1970."
12. "Minimum Monthly Budgets for an African Family of Five in Soweto, 1971."
13. "Apprenticeship Contracts in Operation by Industry, December 13, 1969."
14. "An exhibit Concerning Job Reservation Determinations Issued Under the Industrial Conciliation Act of 1956"—these are the regulations which restrict employment in certain industries, occupations, and areas according to racial category.
15. "Comparative Figures on Income"

The information in the statistical section was obtained from publications of the Government of South Africa and from the South Africa Institute of Race Relations, as indicated. The U.S. Department of Labor can attest neither to the accuracy nor the reliability of the data.

These data often are incomplete and are not comparable. They are, however, the best and most complete information available to us at the time.

Some information requested of the Department by Congressman Diggs is not available. Concerning comparative figures on the income, wages, and employment of blacks, Coloureds, and whites for the South Africa area, some of this information, as I have indicated, is included in the appendixes to my statement.

Data on the percentages of total income is quite limited because of inadequate industry coverage and lack of necessary detail on the items which make up total compensation.

The material I am presenting to the subcommittee deals exclusively with South Africa and not with the other countries of that area in which you have indicated an interest. We do not have information on those countries readily available to us. However, Mrs. Kidney will attempt to gather some data on these areas in her forthcoming trip.

On the matter of labor practices of U.S. firms in South Africa, the Department is not in the position to supply the information the subcommittee has requested. The Department of Labor has minimal contact with U.S. firms doing business in South Africa. That contact is usually in the form of queries which the firms have sent to us concerning labor laws and practices and wage rates.

On the matter of regulations and laws affecting U.S. firms operating in South Africa, I am informed that there are no labor laws specifically directed toward U.S. firms, and the material being submitted concerning general labor law and practice is applicable to all firms operating there.

Congressman Diggs asked that we supply copies of Embassy reports on labor statistics and conditions. Most of these reports transmit the published sources which have been used in putting together the exhibits we have given you. The sources and their publishers are noted on the exhibits.

Any requests you may have for actual foreign service telegrams or dispatches should be directed to the Department of State because these communications from abroad are addressed to the Secretary of State.

The Department of Labor has been interested in the questions of forced labor, particularly in relation to the Convention of the International Labor Organization on forced labor. In 1957, the ILO adopted Convention No. 105 dealing with the abolition of forced labor.

The Honorable J. Ernest Wilkins, now deceased, was then Assistant Secretary of Labor for International Affairs and the head of the U.S. Government delegation to the ILO. The U.S. delegation voted for the convention at that time. To date, some 89 nations have ratified this convention.

The Republic of South Africa has not ratified this convention. Since 1966, of course, it has not been a member of the ILO. The United States has ratified only six conventions, generally those concerning the maritime industry, and has not yet ratified the convention on forced labor.

The ILO convention concerning the abolition of forced labor is an important symbol throughout the world for men and nations who hold dear the dignity and freedom of man. The convention requires that each ratifying member undertake to suppress and not to make use of any form of forced or compulsory labor for the following pur-

poses : as a means of political coercion or education or as a punishment for holding or expressing political views or views ideologically opposed to the established political, social, or economic system; as a method of mobilizing and using labor for purposes of economic development; as a means of labor discipline; as a punishment for having participated in strikes; and as a means of racial, social, national, or religious discrimination.

It further requires that each ratifying member undertake to take effective measures to secure the immediate and complete abolition of the specified forced or compulsory labor.

The ILO Convention on Forced Labor was first sent to the Senate by the executive branch on February 9, 1959. At that time, the coordinated view of the interested departments and agencies of the executive branch was that "ratification is not deemed appropriate for this convention."

Article 19 of the ILO Constitution deals with the difficult problem that so-called "Federal states," like the United States, have in ratifying ILO Conventions. These are nations whose constitutional systems divide powers between the national and State governments.

Article 19 provides that these "Federal states" must determine whether a particular convention adopted by the International Labor Conference is appropriate under the constitutional system of that state for Federal action, or whether it is suitable, in whole or in part, for action by the constituent States, provinces, or cantons.

In 1959, it was the coordinated view that, for that reason, this convention should be "referred to the appropriate State as well as Federal authorities for consideration." Advice and consent for ratification was not, therefore, requested of the Senate.

In 1963, there was revised coordinated view of the interested departments and agencies of the executive branch which reversed the 1959 opinion and held that the Convention was suitable for ratification. President Kennedy's letter to the Senate of July 22, 1963, transmitted the convention "With a view to receiving the advice and consent of the Senate to ratification."

There was rather extensive consideration by the Senate at that time which resulted in a tabling of the matter without an affirmative decision.

One of the arguments which was advanced by some of those opposing ratification was that the prohibition against "any form of forced * * * labor * * * as a punishment for having participated in strikes" might invalidate some U.S. Federal or State laws.

The problem of apartheid in South Africa has been before the International Labor Organization off and on for more than 10 years. The U.S. Government has consistently taken a strong stand against apartheid.

Thanks largely to the U.S. delegation's support and leadership, the 1964 ILO conference adopted a strong "Declaration Concerning the Policy of 'Apartheid' of the Republic of South Africa," which vigorously condemned the institution and called for various actions by the ILO staff, including annual reports by the director-general concerning the application of the declaration.

Even though the Republic of South Africa left the ILO in 1966, the director-general continues each year to submit these reports to the conference. These reports have consistently received the support of the delegations attending the conferences, including those of the United States. I am turning over to you a copy of the declaration and the 1971 annual report entitled: "Seventh Special Report of the Director-General on the Application of the Declaration Concerning the Policy of 'Apartheid' of the Republic of South Africa."*

Concerning U.S. adherence to title 19, paragraph 1307, of the United States Code, which restricts the importation of goods manufactured by convict labor, any authoritative statement on U.S. observance of this law should more properly be provided by the Treasury Department, the agency responsible for enforcement.

An incident that occurred 6 years ago indicates the Labor Department's watchful interest in 19 U.S.C. 1307, particularly as it pertains to South Africa. In 1965, the Department learned from South African sources that fruits harvested by convict labor were being imported into the United States.

We consulted with the Departments of State, Commerce, and Treasury on this matter. From this came an investigation that resulted in the issuance of a notice by the Bureau of Customs to all its field offices calling for the prohibition of South African fruits and fruit products unless clearly marked that no convict labor had been used in their processing.

Grapes, peaches, and other fruits destined for the United States from South Africa were detained at various American and Canadian ports pending proof that convict labor had not been involved in their production.

This completes my formal statement, Mr. Chairman. In it I have attempted to be as responsive as possible to the various points raised in your letter to Secretary Hodgson. If there is additional information the Labor Department can provide that is not included in my statement or the appendixes, we will make every effort to comply with the subcommittee's requests.

Of course, I shall be happy to try and answer any questions the subcommittee may have.

I thank you for the privilege of appearing before you.

(The appendixes to the formal statement follow :)

EXHIBIT TO ACCOMPANY THE DEPARTMENT OF LABOR'S TESTIMONY

PART I—LAWS AFFECTING LABOR IN THE REPUBLIC OF SOUTH AFRICA

- A. Laws Affecting the Population and Labor Supply.
- B. Laws Affecting Employment Practices.
- C. Laws Affecting Industrial Relations.

PART II—INFORMATION ON LABOR IN THE REPUBLIC OF SOUTH AFRICA

Table 1—Population by Race and Area Classification, 1970.

Table 2—Economically Active Population by Race and Sex, 1970.

Table 3—Percent Distribution of Labor Force by Race and Economic Activity, 1970.

* This report has been updated to include the 1972 annual report entitled: "Eighth Special Report of the Director-General on the Application of the Declaration concerning the Policy of 'Apartheid' of the Republic of South Africa." (See appendix, p. 358.)

Table 4—Average Nonagricultural Employment in Selected Activities by Race, 1970.

Table 5—Total Employment in Registered Factories by Race, Sex, and Geographic Area, December 31, 1969.

Table 6—Total Employment and Earnings in Selected Activities by Race (being revised).

Table 7—Total Employment and Earnings, and Average Monthly Earnings by Race and Branch of Manufacturing, May 1971.

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Table 9—African Employment by Economic Activity and Nationality, 1970.

Table 10—Registered Unemployment by Race, Sex, Occupational Group, and Geographic Region, April 1971.

Table II—Average Weekly Hours of Work in Manufacturing and Construction, by Race, December 1970.

Table 12—Minimum Monthly Budgets for an African Family in Soweto, 1971.

Table 13—Apprenticeship Contracts in Operation, by Industry.

Table 14—Job Reservation Determinations Issued by the Industrial Conciliation Act 1956 as of Dec. 1970.

Table 15—Comparative Figures on Income.

PART III—INFORMATION CONCERNING THE INTERNATIONAL LABOR ORGANIZATIONS
“APARTHEID DECLARATION”

A. Copy of the Declaration

B. Eighth Special Report of the Director-General on the Application of the Declaration Concerning the Policy of “Apartheid” of the Republic of South Africa

PART I. LEGISLATION AFFECTING LABOR IN THE REPUBLIC OF SOUTH AFRICA

This legislative material was based primarily on documents in the files of the Bureau of Labor Statistics and in the Legislative Reference Section of the Library of Congress. Therefore, we cannot warrant the comprehensiveness of the list or the accuracy of the comments on the laws.

NOTE: The term “African” as used in this section refers to that group of people designated officially as “Bantu” by the South African Government.

I. LAWS AFFECTING POPULATION AND LABOR SUPPLY IN SOUTH AFRICA

Bantu Land Act (#27 of 1913).—Amended by Bantu Trust and Land Act #18 of 1936; Bantu Laws amendments Acts #46 of 1937 and #54 of 1952; and Group Areas Act #41 of 1950: Provides for the setting apart (reservation) of areas where only Africans may acquire land or interests in land.

Bantu Administration Act (#38 of 1927).—Amended by Bantu Administration Amendment Acts #9 of 1929, #9 of 1939, #42 of 1942, #21 of 1943, #13 of 1955, and #42 of 1956; Bantu Laws Amendment Acts #36 of 1944, #56 of 1949, #54 of 1952, #46 of 1962, #63 of 1966, and #56 of 1968; Bantu (Abolition of Passes and Coordination of Documents) Act #67 of 1952; Bantu Laws Further Amendment Act #79 of 1957; Promotion of Bantu Self-Government Act #46 of 1959; and Maintenance Act #23 of 1963: Establishes the basic administrative structure for governing Africans in reserved areas, vesting substantially unlimited power in the President as “supreme Chief” of all Africans; empowers the President, whenever he deems it expedient in the general public interest, to order the removal of a tribe, a portion of a tribe, or an individual African from one place in the country to another.

Bantu Trust and Land Act (#18 of 1936).—Amended by Bantu Laws Amendment Acts #46 of 1937, #56 of 1949, #46 of 1962, #76 of 1963, #42 of 1964, #63 of 1966, #19 of 1970; the Bantu Laws Further Amendment Act #79 of 1957; Second Bantu Laws Amendment Act #27 of 1970; Third Bantu Laws Amendment Act #49 of 1970; Bantu Trust and Land Amendment Acts #17 of 1939, #18 of 1954, #73 of 1956, #41 of 1958; Finance Acts #17 of 1938 and #46 of 1945; Bantu Bank Act #13 of 1944; Promotion of Bantu Self-Government Act #46 of 1959; Expropriation Act #55 of 1965; Promotion of the Economic Development of Bantu Homelands Act #46 of 1968; General Law Amendment Act #70 of 1968; Bantu Taxation Act #92 of 1969: Places restrictions on

land transactions between Africans and other persons; amends Bantu Land Act #27 of 1913.

Trading and Occupation of Land (Transvaal and Natal) Restriction Act (#35 of 1948).—Amended by Asiatic Land Tenure Act #28 of 1946; Restricts trading and acquisition of fixed property by Asiatics in the Transvaal and Natal.

Bantu (Urban Areas) Consolidation Act (#25 of 1945).—Amended by Financial Relations Consolidation and Amendment Act #38 of 1945; Bantu (Urban Areas) Amendment Acts #43 of 1945, #42 of 1946, #16 of 1955, and #69 of 1956; Bantu Laws Amendment Acts #45 of 1947, #54 of 1952, #36 of 1957, #76 of 1963, #42 of 1964, #63 of 1966, #56 of 1968, and #19 of 1970; Bantu Services Levy Act #64 of 1952; Bantu (Abolition of Passes and Coordination of Documents) Act #67 of 1952; Finance Act #45 of 1953; Bantu Transport Services Act #53 of 1957; Bantu Laws Further Amendment Act #79 of 1957; Urban Bantu Councils Act #79 of 1961; Bantu Beer Act #63 of 1962; and Expropriation Act #55 of 1965: Consolidates and amends the laws which regulate the ingress of Africans into, and their residence in, urban areas; prescribes procedures for the removal of Africans declared "idle" or "undesirable" to their home or last place of residence, or to a rural village, settlement, rehabilitation scheme, institution, or other place indicated by the Bantu Administration; any African removed under this Act may be detained at the place to which he is removed for such period and perform such labor as may be prescribed.

Coloured Persons Settlement Act (#7 of 1946).—Authorizes the government to proclaim any area of Crown land a Coloured persons settlement area.

Asiatic Land Tenure Act (#28 of 1946).—Restricts the acquisition and occupation of fixed property by Asians in Natal and the Transvaal.

Population Registration Act (#30 of 1950).—Amended by Population Registration Amendment Acts #71 of 1956, #30 of 1960, #61 of 1962, #64 of 1967 and #106 of 1969; Statistics Act #73 of 1957; Commonwealth Relations Act #69 of 1962; Bantu Homelands Citizenship Act #26 of 1970: Provides for the completion of a Register of the Population and for the issuance of Identity Cards to persons whose names are included in the Register; Section 22 allows the Governor-General to extend the provisions to South West Africa, after consultation with the South West Africa Executive Committee.

Bantu (Abolition of Passes and Coordination of Documents) Act (#67 of 1952).—Amended by Bantu Laws Further Amendment Acts #79 of 1957, #76 of 1963, #42 of 1964; and Bantu Homelands Citizenship Act #26 of 1970: Repeals laws regarding carrying of passes by Africans; requires all Africans 16 years of age and over to have a reference book which they must produce on demand and which services, inter alia, as an employment record; prohibits the employment of any African whose reference book is not in order; provides for a Bantu Affairs Central Reference Bureau in the Department of Bantu Administration and Development to maintain centralized records of the particulars in the reference books.

Bantu Resettlement Act (#19 of 1954).—Amended by Finance Act #64 of 1960.—Provides for the removal of Africans from any area in the magisterial district of Johannesburg or any adjoining magisterial district and their settlement elsewhere; establishes a Bantu Resettlement Board for that purpose and defines its functions.

Bantu (Prohibition of Interdicts) Act (#64 of 1956).—Prohibits Africans from obtaining court orders to restrain any executive action being taken against them.

Prisons Act (#8 of 1959).—Provides for the establishment of farms to which idle persons or those proclaimed undesirable may be sent for a maximum of two years; authorizes the Commissioner of Prisons to contract with any authority or public body or with any person or body of persons for the employment of prisoners.

Urban Bantu Councils Act (#79 of 1961).—Amended by Bantu Laws Amendment Act #76 of 1963 and Third Bantu Laws Amendment Act #49 of 1970: Provides for the establishment of Urban Bantu Councils, whose powers include the ability to prohibit or regulate the entry or sojourn of Africans in urban areas.

Retreats and Rehabilitation Centers Act (#86 of 1963).—Repeals and incorporates some provisions of the Work Colonies Act #25 of 1949; provides that persons having no sufficient honest means of livelihood may be sent to retreats or rehabilitations centers for a period of three years; such persons include alcoholics, drug addicts, and persons who lead idle, dissolute, or disorderly lives;

provides for the payment of allowance for any work performed by the detainees, at rates to be set by regulations.

Group Areas Act (#36 of 1966).—Imposes residential segregation; consolidates or replaces earlier group areas legislation; provides that certain areas be set aside for occupation by a particular racial group; when a group area is proclaimed, disqualified persons must leave within a specified period—in the case of business premises, at least 24 months.

Community Development Act (#3 of 1966).—Amended by Community Development Amendment Acts #42 of 1967, #58 of 1968, and #58 of 1969: Supplements the Group Areas Act #36 of 1966; regulates the disposal of properties in certain areas; establishes the procedure for the issuance of trading licences.

Physical Planning and Utilization of Resources Act (#88 of 1967).—Prohibits the establishment or extension of factories in areas defined by the President, who may impose such conditions as he sees fit, including conditions in connection with labor; provides that for purposes of this Act “extension of a factory” means any increase in the number of African employees.

II. LAWS AFFECTING CONDITIONS OF EMPLOYMENT

Mines and Works Act (#12 of 1911).—Amended by Mines and Works Amendment Acts #25 of 1926, #22 of 1931, #5 of 1934, #27 of 1956, #51 of 1959, and #91 of 1956: Prescribes the first statutory color bar; reserves to Europeans and to certain classes of Coloured persons, the delivery of certificates of competency required for performing certain work in the mines and related undertakings; divides various classes of work among persons of different races.

Master and Servants Law (Transvaal and Natal) Amendment Act (#26 of 1926).—Amends Acts #13 of 1880 of the Transvaal and #40 of 1894 of Natal, both of which deal with certain contracts of employment which are entered into by persons in trades and areas outside the jurisdiction of the apprenticeship laws.

Wage Determinations Validation Act (#21 of 1930).—Validated certain wage determinations made under the Wage Act of 1925 (See Wage Act #5 of 1957).

Motor Carrier Transportation Act (#39 of 1930).—Amended by Bantu Transportation Services Act #53 of 1957, and Motor Carrier Transportation Amendment Act #42 of 1959: Provides, inter alia, for racial segregation of employment in public transport.

Wage Determinations Validation Act (#16 of 1935).—Validated certain wage determinations made under the Wage Act of 1925 (See Wage Act #5 of 1957).

Electrical Wiremen and Contractors Act (#20 of 1939).—Provides that wiring work in buildings shall be performed only by persons who have been registered as electrical wiremen by the Electrical Wiremen's Registration Board.

Workmen's Compensation Act (#30 of 1941).—Amended by Workmen's Compensation Acts #27 of 1945, #36 of 1949, #5 of 1951, #51 of 1956, #7 of 1961, #21 of 1964, #58 of 1967, #9 of 1970; Finance Act #48 of 1947; Railways and Harbors Sinking Fund Act #39 of 1960; Pension Laws Amendment Act #98 of 1969; and Second Bantu Laws Amendment Act #27 of 1970.

The Second Schedule to the Act has been amended by Proclamations #147 of 1951, #63 of 1952, and #170 of 1959, and Proclamation #R90 of 1962: Provides for the compensation of workmen or of their dependents if the workman is injured or killed as a result of an accident arising out of the course of his employment; benefits include compensation for temporary, partial, or total disablement, permanent disablement, and in the event of death, compensation to dependents and an allowance towards funeral expenses.

Factories, Machinery, and Building Works Act (#22 of 1941).—Amended by Factories, Machinery, and Building Works Amendment Acts #31 of 1960, #34 of 1963, #6 of 1966, #77 of 1967, and #53 of 1968: Provides for the registration and control of factories, the regulation of hours of work and other conditions of employment in factories, supervision over the use of machinery, precautionary measures against accidents on building and excavation work and, generally, such control as is considered necessary to ensure the safety and welfare of factory employees.

Soldiers and War Workers Employment Act (#40 of 1944).—Promotes the civilian employment of persons who have rendered military or other war service during World War II.

Apprenticeship Act (#37 of 1944).—Amended by Apprenticeship Amendment Acts #28 of 1951, #29 of 1959, and #46 of 1963: Regulates the training and

employment of apprentices in recognized trades; provides for the establishment of Apprenticeship Committees for specific industries and areas, which are entrusted, *inter alia*, with the necessary control over the indenturing of apprentices by employers who have the required training facilities.

Registration for Employment Act (#34 of 1945).—Provides for the registration and placement of unemployed white, coloured, and Asian workseekers; empowers the Labor Department to operate employment exchanges at all its branch offices; provides for the establishment of Juvenile Affairs Boards to advise the Labor Department in matters relating to juveniles.

Bantu Building Workers Act (#27 of 1951).—Amended by Bantu Building Workers Amendment Acts #38 of 1953, #60 of 1955, and #56 of 1959: Provides for the training and registration of African building workers and for the regulation of their employment and conditions relating to such employment; establishes a Bantu Building Workers Advisory Board; prohibits an employer in the building industry from employing an African on skilled work in the building industry within any non-African area without the written consent of the Minister of Bantu Affairs; a similar prohibition applies to the employment of white workers in African areas.

Training of Artisans Act (#38 of 1951).—Amended by Apprenticeship Amendment Act #46 of 1963: Provides for the training of persons, other than minors, in order to enable them to attain artisan status; provides for intensive training in a government institution on a fulltime basis for a specified period, followed by training in employment with an approved employer.

Bantu Services Levy Act (#64 of 1952).—Amended by Bantu Transport Services Act #53 of 1957; Bantu Laws Further Amendment Act #79 of 1957; Bantu Laws Amendment Act #42 of 1964: Provides for contributions by employers towards the cost of certain services for the health and safety of their African employees.

Industrial Conciliation Act (#28 of 1956).—Section 77, entitled "Safeguards Against Inter-Racial Competition," authorizes the Minister of Labor to reserve specified classes of work in any enterprise, trade, occupation, or industry, for specified racial categories, and empowers him to establish minimum and maximum percentages of persons of each racial category that may be employed in any enterprise, trade, occupation or industry; the Minister's determinations may apply to a specified geographic area or to the entire country. (See Section III below.)

Protection of Wages Act (#40 of 1956).—Consolidates the laws regarding the securing of payment of workmen's wages; repeals the Workmens Wages Protection Act #15 of 1914.

Wage Act (#5 of 1957).—Consolidates and amends laws regarding the establishment of a wage board and the determination of terms and conditions of employment; supplements the provisions of the Workmens Wages Protection Act #40 of 1956 and repeals earlier Wage Acts but permits any determinations issued thereunder to remain in effect.

Bantu Transport Services Act (#53 of 1957).—Amended by the Bantu Laws Amendment Act #42 of 1964: Provides for the payment of contributions by employers towards the cost of transport services for their African employees and for the establishment of a Bantu Transport Services account.

Nursing Act (#69 of 1957).—Provides generally for segregation in the fields of nursing and midwifery and permits only whites to hold positions on the Nursing Council which is responsible for regulating the profession; authorizes the council to prescribe different conditions and qualifications for entry into the profession for different classes of persons; forbids the employment of nonwhites in positions involving the control or supervision of white persons.

Old Age Pensions Act (#38 of 1962).—Amended by Pension Laws Amendment Acts #92 of 1962, #95 of 1963, #84 of 1964, #102 of 1965, and #91 of 1967: Consolidates laws relating to old age pensions; provides for payment of pensions to all citizens, with benefits and the methods of calculation varying according to race.

Shops and Offices Act (#75 of 1964).—Consolidates and amends law regarding the regulation of hours and conditions of work in shops and offices; repeals Shops and Offices Act #41 of 1939.

Bantu Labor Act (#67 of 1964).—Amended by Bantu Laws Amendment Act #19 of 1970: Consolidates laws regulating the recruitment, employment, accommodation, feeding, and health conditions of African laborers; transfers responsi-

bility for influx control from local authorities to labor bureaus, which oversee both influx control and labor control; requires that in the prescribed areas permission from the labor bureau must be obtained for an African to take up employment; permits the labor bureaus in specified circumstances, to refuse to sanction the employment or continued employment of any African or to cancel an existing contract of employment; authorizes the Minister of Bantu Administration to prohibit the performance of work by or the continued employment of an African in a specified area, class of employment, or trade, or in the service of a specified employer or class of employers; provides that this prohibition may be applied to a specific area or generally.

Unemployment Insurance Act (#30 of 1966).—Amended by Unemployment Insurance Amendment Acts #27 of 1967 and #87 of 1968: Consolidates earlier laws regarding the Unemployment Insurance Fund and the payment of benefits to members and dependents; provides for the payment of ordinary unemployment benefits, as well as illness allowances, maternity benefits, and death benefits to survivors.

Coloured Cadets Training Act (#46 of 1967).—Requires all Coloured youths between 18 and 24 years of age to register for training at a training center; authorizes the Minister of Coloured Affairs to establish and maintain training centers for training cadets for employment; includes penal sanctions for various offenses such as failure to register, refusal to undergo training to the best of one's ability, and absconding from a training center.

Promotion of the Economic Development of Bantu Homelands Act (#46 of 1968).—Provides inter alia, for the inauguration, planning, financing, coordination, promotion, and carrying out of industrial, commercial, financial, mining, and other business undertakings and projects in the Bantu homelands; establishes an investment corporation whose powers include authorization to promote projects to benefit and develop the Bantu homelands and Bantu persons therein economically or projects which relate to the exploitation, development, or utilization of a natural resource, which "in addition to the ordinary meaning thereof, shall include labor . . ."; other powers include the training of Bantu persons as employees, officers, managers, or directors; Section 32 applies the act to South West Africa.

III LAWS AFFECTING INDUSTRIAL RELATIONS

Suppression of Communism Act (#44 of 1950).—Declares the Communist Party of South Africa to be an unlawful organization; makes provision for declaring other organizations promoting "communistic activities" to be unlawful and provides for prohibiting certain publications; prohibits "communistic or other undesirable activities"; and makes provisions for "other incidental matters." Section 18 extends the provisions of the Act to South West Africa.

Criminal Law Amendment Act (#8 of 1953).—Imposes penalties against any offence committed "by way of protest" or in support of a campaign to repeal or modify any law or to impede its administration, or to incite anyone else to do so.

Bantu Labor (Settlement of Disputes) Act (#48 of 1953).—Amended by Bantu Labor (Settlement of Disputes) Amendment Act #59 of 1955, and Industrial Conciliation Act #28 of 1956: Provides for the settlement of African labor disputes and for the regulation of conditions of employment of Africans; excludes Africans from the definition of "employee", thus preventing African unions from being registered or from belonging to registered unions (only "employees" may form or belong to registered unions); prohibits strikes by African workers; prohibits Africans from appointment to positions as worker representatives on industrial councils or at proceedings of a conciliation board.

Riotous Assemblies Act (317 of 1956).—Empowers the Minister of Justice to authorize a magistrate to prohibit any gathering in his district if the Magistrate believes that such a gathering would endanger the public peace; allows the magistrate to prohibit a specific individual from attending a gathering if the magistrate feels that the presence of said individual would engender feelings of hostility between whites and other races; prohibits the dissemination, in any way or in any form, of statements made by an individual who is prohibited under this Act from attending a public gathering; prohibits the dissemination of any documentary information which is likely to engender racial hostility; prohibits anyone from compelling a person to become a member of any organization, or from trespassing on any work premises to induce a person employed

thereon to stop work unlawfully; prohibits a public service employee from breach of contract if he knows that the likely result would be, inter alia, to expose valuable property to destruction or serious injury.

Industrial Conciliation Act (#28 of 1956).—Amended by Industrial Conciliation Amendment Acts #41 of 1959, #18 of 1961, #43 of 1966, #61 of 1966, and #21 of 1970: Consolidates and amends the laws regarding the registration of trade unions and employers' organizations, and the settlement of industrial disputes; provides for the prevention and settlement of disputes between employers and employees, the regulation of conditions of employment by agreement and arbitration, the prevention of interracial competition in the labor field; excludes Africans from its scope; provides that no racially mixed unions may henceforth be registered and those already existing must set up separate branches for white and coloured members and that the executive body of the union shall consist only of white persons.

Unlawful Organizations Act (#34 of 1960).—Empowers the President to declare unlawful any organization that threatens or is likely to threaten public safety or order; makes most provisions of the Suppression of Communism Act #44 of 1950, applicable to any organization declared unlawful under this Act.

Sabotage Act (General Law Amendment Act #76 of 1962).—Prohibits any action undertaken with the intent to cause or promote a general disturbance, cripple or seriously prejudice an industry or undertaking, encourage the achievement of certain political aims such as social or economic change in the country, cause serious financial loss to the State or to any person, cause or further hostility between segments of the population, or to "embarrass the administration of the affairs of the State;" Section 21 extend the provisions to South West Africa.

PART II. INFORMATION ON LABOR IN THE REPUBLIC OF SOUTH AFRICA

The information in this statistical section was obtained from publications of the Government of South Africa and of the South Africa Institute of Race Relations, as indicated. The U.S. Department of Labor can attest neither to the accuracy nor reliability of the data. These data often are incomplete and are not comparable. They are, however, the best and most complete information available to us at this time.

TABLE 1.—POPULATION BY RACE¹ AND AREA CLASSIFICATION, 1970

Areas	Race				
	Total	Bantu	White	Coloured	Asian
All areas.....	21, 448, 169	15, 057, 952	3, 751, 328	2, 018, 453	620, 436
Urban.....	10, 280, 202	4, 989, 371	3, 257, 805	1, 494, 490	538, 536
Percent in urban areas.....	(47.9)	(8.5)	(86.8)	(74.0)	(86.8)
Rural.....	11, 167, 967	10, 068, 581	493, 523	523, 963	81, 900
White areas.....	14, 414, 044	8, 060, 773	3, 730, 951	2, 005, 325	616, 995
Urban.....	9, 681, 530	4, 407, 015	3, 247, 246	1, 488, 928	538, 341
Rural.....	4, 723, 514	3, 653, 785	483, 705	516, 397	78, 654
Bantu Homelands.....	7, 034, 125	6, 997, 179	20, 377	13, 128	3, 441
Urban.....	598, 672	582, 356	10, 599	5, 562	195
Rural.....	6, 435, 453	6, 414, 823	9, 818	7, 566	3, 246

¹ As defined officially by the South African Government. (See Population Registration Act, No. 30 of 1950.)

Source: Republic of South Africa, Department of Statistics. Statistical News Release, population census 1970, Aug. 10, 1971.

TABLE 2.—ECONOMICALLY ACTIVE POPULATION BY RACE¹ AND SEX, 1970

Race	Race			Economically active as per cent of racial group
	Total	Male	Female	
All races.....	7,369,700	5,594,000	1,775,700	34.4
Bantu.....	4,983,000	3,885,000	1,098,000	33.1
White.....	1,448,000	1,048,000	400,000	38.6
Coloured.....	750,500	495,000	255,500	37.2
Asian.....	188,200	166,000	22,200	30.3

¹ As defined officially by the South African Government. (See Population Registration Act, No. 30 of 1950.)

Source: South African Institute of Race Relations (from unpublished data presented at a National Labor Conference, Cape Town, April 1971).

TABLE 3.—PERCENT DISTRIBUTION OF LABOR FORCE BY RACE¹ AND ECONOMIC ACTIVITY, 1970

Economic activity	Race				
	All races	Bantu	White	Coloured	Asian
Agriculture.....	100	83.0	7.5	8.8	0.6
Mining.....	100	89.3	9.8	.9	—
Manufacturing and construction.....	100	56.6	22.9	15.5	5.0
Services and other.....	100	52.4	34.8	10.1	2.7

¹ As defined officially by the South African Government. (See Population Registration Act, No. 30 of 1950.)

Source: South African Institute of Race Relations (from unpublished data presented at a National Labor Conference, Cape Town, April 1971).

TABLE 4.—AVERAGE NONAGRICULTURAL EMPLOYMENT IN SELECTED ACTIVITIES BY RACE,¹ 1970

Economic activity	Total	Bantu	White	Coloured	Asian
Total, all activities.....	3,263,448	1,954,471	865,025	341,452	102,600
Mining and quarrying.....	656,815	587,292	62,638	6,262	623
Manufacturing ²	1,164,100	617,200	276,900	195,800	74,300
Construction ³	355,700	247,100	59,500	44,600	4,500
Banking.....	48,320	5,016	41,939	1,160	205
Transport ⁴	222,394	96,579	110,314	14,312	1,189
Communications ⁴	55,656	12,683	38,506	4,025	442
Government.....	641,019	329,395	237,135	61,114	13,375
Central.....	277,187	138,996	99,933	30,918	7,340
Provincial.....	183,832	76,899	92,302	12,396	2,235
Local.....	180,000	113,500	44,900	17,800	3,800
Universities ⁵	15,937	4,071	10,105	1,467	294
Electricity ⁶	22,700	14,100	8,000	7,600	(?)
Laundry and dry cleaning.....	20,400	12,600	2,500	3,800	1,500
Control boards ⁷	2,076	433	1,557	86	0
Licensed hotels.....	49,200	26,600	8,500	8,000	6,100
Building societies.....	9,131	1,402	7,431	226	72

¹ As defined officially by the South African Government. (See Population Registration Act, No. 30 of 1950.)

² Includes seasonal and occasional employees; excludes working proprietors.

³ Includes all activities of the South African railways and harbors, and approximately 7,700 railway employees in South West Africa.

⁴ Data cover Department of Posts and Telegraphs, and include postal employees in South West Africa.

⁵ Excludes teacher training, correspondence, and technical colleges.

⁶ Data cover private establishments and the government-operated Electricity Supply Commission.

⁷ Asiatics includes with Coloureds.

⁸ Not defined.

Source: Republic of South Africa, Department of Statistics. Bulletin of Statistics, September 1971.

TABLE 5.—TOTAL EMPLOYMENT IN REGISTERED FACTORIES BY RACE, SEX, AND GEOGRAPHIC AREA, DEC. 31, 1969

Geographic area	Bantu						White						Coloured						Asian						
	Total		Male		Female		Total		Male		Female		Total		Male		Female		Total		Male		Female		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	
Total.....	1,252,944	1,012,453	240,491	649,753	581,655	68,098	315,044	249,063	65,981	214,196	124,064	90,132	73,951	57,671	16,280										
Durban.....	249,711	210,925	38,786	131,431	118,635	12,796	42,149	35,097	8,052	10,165	5,698	4,467	65,966	52,495	13,471										
Johannesburg.....	244,273	192,132	52,141	146,581	123,507	23,074	70,996	53,538	17,458	23,351	12,730	10,621	3,345	2,357	988										
Cape Town.....	212,683	139,640	73,043	31,450	30,490	960	43,132	34,429	8,703	136,503	74,011	62,492	1,598	710	888										
Pretoria.....	106,354	91,942	14,412	77,798	69,770	8,028	26,367	20,712	5,655	1,727	1,143	584	462	317	145										
Germiston.....	105,193	93,401	11,792	65,205	61,079	4,126	35,911	29,192	6,719	3,489	2,696	793	588	434	154										
Benoni.....	98,981	88,169	10,812	65,881	61,892	3,989	30,093	23,961	6,132	2,380	1,908	472	627	408	219										
Port Elizabeth.....	82,706	66,109	16,597	27,898	25,355	2,543	25,700	20,024	5,676	28,036	19,974	8,062	1,072	796	316										
Vereeniging.....	55,940	51,324	4,616	38,336	36,171	2,165	16,801	14,518	2,283	4,745	3,579	1,166	38	36	2										
Bloemfontein.....	55,925	49,255	6,670	35,534	33,361	2,173	15,670	12,369	3,301	4,642	3,464	1,178	79	61	18										
East London.....	41,178	29,556	11,622	29,639	21,395	8,244	8,225	6,223	2,002	3,158	1,861	1,297	156	77	79										

¹ As defined officially by the South African Government (See Population Registration Act No. 30 of 1960.)

Source: Republic of South Africa, Report of the Labour Department for the period ending Dec. 31 1969.

TABLE 6.—TOTAL EMPLOYMENT AND EARNINGS, AND AVERAGE MONTHLY EARNINGS IN SELECTED ACTIVITIES BY RACE¹, MARCH 1971

Economic activity	[Earnings in rand] ²														
	All races			Bantu			White			Coloured			Asian		
	Employment	Earnings (thou-sands)	Average earnings	Employment	Earnings (thou-sands)	Average earnings	Employment	Earnings (thou-sands)	Average earnings	Employment	Earnings (thou-sands)	Average earnings	Employment	Earnings (thou-sands)	Average earnings
All activities.....	3, 296, 485	5 604, 446	183.36	1, 983, 619	107, 859	54.38	873, 076	424, 998	486.77	340, 807	41, 833	122.75	98, 983	12, 364	124.89
Mining and quarrying.....	661, 531	35, 147	53.13	592, 819	10, 967	18.50	61, 782	23, 599	381.86	6, 352	523	81.72	578	58	100.35
Manufacturing.....	1, 202, 400	152, 487	126.82	644, 900	36, 666	56.86	279, 700	93, 162	333.08	201, 300	16, 158	80.27	76, 500	6, 501	84.98
Construction.....	383, 300	42, 407	110.64	270, 000	14, 760	54.67	60, 800	21, 116	347.30	47, 200	5, 705	120.87	5, 300	826	155.85
Electricity.....	23, 900	4, 016	168.03	14, 900	928	62.28	8, 400	3, 039	361.79	600	49	81.67	(⁶)	(⁶)	(⁶)
Transport ³	226, 200	3 39, 628	175.19	97, 670	(⁶)	(⁶)	112, 813	33, 477	296.78	14, 388	(⁶)	(⁶)	1, 329	(⁶)	(⁶)
Communications ⁷	59, 309	3 11, 241	189.58	13, 235	(⁶)	(⁶)	41, 267	(⁶)	(⁶)	4, 299	(⁶)	(⁶)	508	(⁶)	(⁶)
Banking institutions.....	51, 310	35, 292	687.95	5, 183	963	185.19	44, 551	33, 850	763.15	1, 280	269	210.16	296	100	337.84
Building societies.....	9, 789	6, 361	649.08	1, 429	236	168.57	8, 043	6, 028	749.47	1, 226	67	296.46	91	30	329.67
Universities.....	17, 446	11, 998	689.54	4, 325	683	158.84	11, 312	10, 791	954.96	1, 471	401	272.60	338	123	363.91
Government administration.....	661, 300	265, 869	402.04	339, 158	42, 656	125.79	244, 408	199, 826	817.62	63, 691	18, 661	292.95	14, 043	4, 726	336.54

¹ As defined officially by the South African Government (See Population Registration Act, No. 30 of 1950).

² R1 equals US \$1.41.

³ Total differs from sum of individual items because total includes earnings of 6,151 rands in the transport sector and 11,241 rands in the communications sector for which no breakdown by race is given.

⁴ Less than 50.

⁵ Not available.

⁶ Refers to South African railways and harbors only.

⁷ Refers to post office only.

Note: Averages obtained by dividing earnings by employment.

Source: Republic of South Africa, Department of Statistics, Statistical News Releases, June 16, 1971, June 18, 1971, and Sept. 13, 1971.

TABLE 7.—TOTAL EMPLOYMENT AND EARNINGS, AND AVERAGE MONTHLY EARNINGS: BY RACE AND BRANCH OF MANUFACTURING, MAY 1971
[Earnings in South African rand]^a

Branch of manufacturing	All races			Bantu			White			Coloured			Asian		
	Employ- ment	Earnings (thou- sands)	Average earnings	Employ- ment	Earnings (thou- sands)	Average earnings	Employ- ment	Earnings (thou- sands)	Average earnings	Employ- ment	Earnings (thou- sands)	Average earnings	Employ- ment	Earnings (thou- sands)	Average earnings
Total.....	1,202,900	142,306	118.30	647,800	33,672	51.98	279,100	87,918	315.01	199,500	14,628	73.32	76,500	6,088	79.58
Food.....	134,700	11,298	83.81	87,000	3,682	42.32	19,900	5,738	288.34	19,300	1,135	58.81	8,500	743	87.41
Beverages.....	24,200	2,795	115.50	12,500	1,686	54.32	5,500	1,686	306.55	5,800	376	64.83	4,000	54	135.00
Tobacco.....	4,100	520	127.32	1,900	108	56.84	1,200	1,354	295.00	1,000	58	58.00	0	0	0
Textiles.....	85,900	6,500	75.67	55,800	2,405	43.10	8,100	2,615	322.84	15,500	998	64.39	6,500	482	74.15
Clothing.....	118,600	8,828	74.44	32,400	1,587	48.98	10,500	2,896	275.81	53,000	3,088	58.26	22,700	1,257	55.37
Footwear.....	34,400	3,069	89.22	4,100	242	59.02	2,900	728	251.03	11,800	884	74.92	15,600	1,113	77.88
Wood and cork.....	54,700	3,115	56.95	43,600	1,334	30.60	4,900	1,393	284.29	5,000	275	55.00	1,200	103	94.17
Furniture.....	36,000	3,884	107.89	19,700	1,051	53.35	5,700	1,748	306.67	8,900	882	99.10	1,700	203	119.41
Paper and paper products.....	30,500	4,248	139.28	14,800	1,010	68.24	7,300	2,437	333.84	4,700	396	84.25	3,700	405	109.45
Printing.....	35,100	7,073	200.91	8,100	675	83.33	17,700	5,359	302.77	7,800	833	106.79	1,500	208	137.33
Leather and leather products.....	7,100	654	93.43	1,900	107	56.32	800	520	258.75	3,900	300	76.32	500	40	80.00
Rubber products.....	21,500	2,751	127.95	13,300	837	62.00	5,400	1,656	306.67	1,900	192	101.05	700	66	94.29
Chemicals and chemical pro- ducts.....	63,100	9,605	152.22	34,600	1,949	56.33	20,900	6,996	334.74	5,800	461	79.48	1,800	199	110.56
Nonmetallic minerals.....	98,300	9,213	93.72	74,400	3,410	45.83	16,100	5,121	318.07	7,000	575	82.14	800	107	133.75
Basic metal.....	74,200	13,419	180.85	42,500	2,645	85.76	29,900	10,531	352.21	1,200	164	135.67	600	79	131.67
Metal products.....	140,100	17,954	128.06	90,700	5,471	60.32	34,500	11,134	322.72	9,800	954	97.35	5,100	395	77.45
Machinery.....	62,900	11,165	177.50	32,700	1,863	60.03	26,400	8,840	334.85	3,400	308	90.59	400	54	135.00
Electrical machinery.....	46,200	6,961	150.67	19,000	1,202	63.26	17,400	4,896	281.38	9,000	776	86.22	800	87	108.75
Transport equipment.....	85,000	12,626	148.54	39,100	2,242	57.34	29,900	8,989	300.64	14,900	1,273	85.44	1,100	122	110.91
Miscellaneous.....	46,300	6,628	143.15	19,500	1,073	55.03	14,100	4,594	325.82	9,800	700	71.43	2,900	261	90.00

¹ Includes overtime and premiums.

² As officially defined by the South African Government. (See the Population Registration Act, No. 30 of 1950.)

³ R1 equals US\$1.41.

Note: Averages obtained by dividing earnings by employment.

Source: Republic of South Africa, Department of Statistics, Statistical News Release, Sept. 13, 1971.

TABLE 8.—TOTAL EMPLOYMENT AND EARNINGS, AND AVERAGE ANNUAL EARNINGS,¹ BY RACE² AND TYPE OF MINING, DECEMBER 1970
[Earnings in South African rand]³

Type of mining	Total employment	Bantu			White			Coloured			Asian				
		Total earnings	Average earnings	Employment	Earnings	Average earnings	Employment	Earnings	Average earnings	Employment	Earnings	Average earnings	Employment		
Total	682,845	488,100,414	714,79	599,688	139,251,925	250,57	75,749	342,223,388	4,517,86	6,786	5,927,971	873,56	622	897,130	1,120,79
Gold	413,272	247,006,913	597,68	378,959	79,257,731	209,15	33,968	167,350,146	4,926,70	326	378,071	1,159,73	19	20,965	1,103,42
Diamond	21,005	18,509,709	881,20	15,304	5,045,666	329,70	3,388	11,766,827	3,478,31	2,310	1,695,416	733,95	3	1,800	600,00
Coal	72,555	48,750,830	671,92	65,454	14,156,077	216,28	6,772	34,295,527	5,064,31	60	40,382	673,03	269	258,844	962,25
Cooper	1,541	15,161,020	1,313,67	7,646	2,668,475	335,92	2,144	10,207,968	4,761,18	1,751	2,384,577	1,361,84			
Iron	2,720	1,368,764	510,58	2,510	492,058	196,04	210	896,706	4,270,03						
Asbestos	19,817	8,262,359	4,169,33	18,572	3,707,253	199,61	990	4,355,943	4,399,94	255	199,213	781,23			
Chrome	4,895	1,744,352	356,35	4,673	860,257	184,09	222	884,095	3,982,41						
Manganese	8,045	3,554,545	441,83	7,524	1,518,073	201,76	508	2,012,028	3,978,40	13	15,444	1,188,00			
Iron ore	5,002	5,168,438	861,12	5,012	1,168,512	233,14	969	3,990,018	4,117,67	21	9,908	471,81			
Other mining	59,443	37,599,177	632,52	54,133	12,165,719	224,74	4,786	25,150,976	5,255,11	519	270,024	520,28	5	12,458	2,491,60
Quarries	21,598	13,810,025	641,19	18,125	6,453,633	355,67	1,798	6,309,079	3,508,94	1,270	645,337	508,14	325	401,966	1,236,88
Salt works ⁴	42,012	87,144,272	2,074,27	21,756	11,886,521	545,07	19,994	74,995,075	3,750,88	261	289,599	1,109,57	1	1,077	1,077,00

¹ Includes allowances.

² As defined officially by the South African Government. (See Population Registration Act No. 30 of 1950.)

³ R1 equals US\$1.41.

⁴ Includes "other works" (undefined).

Note: Averages obtained by dividing earnings by employment.

Source: Republic of South Africa, Department of Mines. Mining Statistics, 1970.

TABLE 9.—AFRICAN¹ EMPLOYMENT BY ECONOMIC ACTIVITY AND NATIONALITY, 1970

Economic activity	Total employment	Nationality	
		South African	Other
All activities.....	3, 199, 889	2, 773, 183	426, 706
Agriculture, forestry, and fishing.....	390, 958	355, 620	35, 338
Mining and quarrying.....	583, 804	240, 915	342, 889
Manufacturing.....	554, 515	541, 305	13, 210
Construction.....	285, 309	278, 736	6, 573
Wholesale and retail trade.....	202, 323	199, 365	2, 958
Finance.....	15, 074	14, 830	244
Transportation.....	134, 566	128, 598	5, 968
Government administration.....	230, 127	225, 701	4, 426
Central and provincial.....	104, 464	102, 812	1, 652
Local.....	125, 663	122, 889	2, 774
Public corporations.....	46, 157	44, 188	1, 969
Semipublic organizations.....	11, 530	11, 390	190
Services.....	745, 476	732, 535	12, 941
Domestic.....	510, 822	502, 923	7, 899
Other.....	234, 654	229, 612	5, 042

¹ Refers to persons officially designated "Bantu" by the South African Government.

Note: Data refer to workers registered with regional, local, district, territorial, and tribal labor bureaus.

Source: South African Institute of Race Relation from data presented by the Minister of Bantu Administration and Development in the House of Assembly, Mar. 5, 1971.

TABLE 10.—REGISTERED UNEMPLOYMENT BY RACE, SEX, OCCUPATIONAL GROUP, AND GEOGRAPHIC REGION, APRIL 1971

Occupational group and geographic region	White			Coloured			Asian			
	Total	Male	Female	Total	Male	Female	Total	Male	Female	
	Total.....	8,808	3,438	1,208	2,230	3,806	2,442	1,364	1,564	1,445	119
Occupational group:	90	71	13	58	7	2	5	12	6	6
Professional and semiprofessional.....	2,101	1,643	219	1,424	148	68	80	310	277	33
Administrative and clerical.....	733	492	67	425	99	17	82	142	123	19
Commercial.....	503	187	177	10	214	210	4	102	102	3
Skilled ¹	638	273	105	168	303	29	274	62	59	3
Service.....	343	68	67	1	138	138	353	137	137	45
Transport.....	1,775	260	189	71	957	604	353	558	513	13
Operatives and semiskilled.....	2,532	360	300	60	1,931	1,366	565	241	228	13
Unskilled.....	93	84	71	13	9	8	1	241	228	13
Other.....										
Region:	2,820	831	287	544	497	329	168	1,492	1,387	105
Durban.....	1,612	401	149	252	1,210	556	654	1	1	105
Cape Town.....	1,333	980	364	616	300	233	67	53	47	6
Johannesburg.....	1,162	265	136	129	718	573	145	145	145	6
Port Elizabeth.....	884	98	31	67	756	546	210	13	8	5
Kimberly.....	413	366	68	298	34	15	19	13	8	5
Pretoria.....	198	198	97	101	202	135	67	5	2	3
East London.....	304	247	65	182	57	44	13	13	13	3
Bloemfontein.....	84	52	11	41	32	11	21	21	21	3
George.....										

¹ Excludes "Bantu," for whom no data are registered.

² Includes applicants for apprenticeship.

Source: Republic of South Africa, Department of Labor "Statistics Regarding Workseekers in the Republic of South Africa" April 1971.

TABLE 11.—AVERAGE WEEKLY HOURS OF WORK IN MANUFACTURING AND CONSTRUCTION, BY RACE,¹ DECEMBER 1970

Race	Manufacturing		Construction	
	Regular hours	Overtime	Regular hours	Overtime
All races.....	41.7	4.0	41.8	4.0
Bantu.....	42.3	4.3	42.0	4.1
White.....	41.0	4.6	42.3	5.6
Coloured.....	40.4	2.5	40.1	1.7
Asian.....	41.2	4.4	40.2	4.9

¹ As defined officially by the South African Government. (See Population Registration Act, No. 30 of 1950.)

Source: Republic of South Africa, Department of Statistics. Statistical Bulletin, September 1971.

TABLE 12.—MINIMUM MONTHLY BUDGETS FOR AN AFRICAN¹ FAMILY IN SOWETO, 1971

[In South African rand]²

	Budget A ³	Budget B ⁴	Budget C ⁵
Total.....	69.86	117.72	75.80
Food.....	36.38	59.39	37.64
Rent.....	7.00	6.40	6.00
Clothing.....	10.00	10.00	10.19
Lighting and/or fuel.....	4.40	4.40	.....
Water charges.....	.80	.80	.....
Train fares.....	5.80	5.80	5.03
Internal transport.....	.....	4.80	3.92
Soap.....	2.60	2.70	.92
Books and stationery.....	1.00	6.00	1.61
Burial society contribution.....	1.00	.40	.....
Tax and tribal levy.....	.38	.....	.82
School fees.....	.50	.40	2.50
Education levy.....	.....	.38	.....
Creche fees.....	.....	2.25	.....
Church contribution.....	.....	.50	.....
Medical charges.....	.....	2.50	.50
Tobacco.....	.....	7.00	.....
Contingencies and amusement.....	.....	4.00	4.58
Furniture and furnishings.....	.....	.....	2.09

¹ Refers to persons officially classified as "Bantu" by the South African Government. Family consists of 5 persons.

² R1 equals US\$0.41.

³ Calculated by the Johannesburg Municipal non-European Affairs Department.

⁴ Calculated by the Soweto Urban Council.

⁵ Calculated by the Johannesburg Chamber of Commerce.

TABLE 13.—APPRENTICESHIP CONTRACTS IN OPERATION, BY INDUSTRY, DEC. 31, 1969

Industry:	Contracts
Aviation.....	24
Building.....	5,153
Coal mining.....	69
Diamond cutting.....	502
Electricity supply.....	220
Explosives and allied industries.....	98
Food (butchery).....	163
Furniture.....	1,275
Government undertakings.....	807
Grain milling.....	34
Hairdressing.....	2,046
Jewelers and goldsmiths.....	101
Metal (engineering).....	9,435
Mining.....	1,908
Motor.....	6,087
Printing.....	1,723
South African railways.....	5,901
Sugar manufacturing and refining.....	126
Typewriter and office appliances.....	289
Total.....	35,961

Source: Republic of South Africa, Department of Labor. Report for the period ending Dec. 31, 1969. Table XVI, p. 20.

TABLE 14.—JOB RESERVATION DETERMINATIONS ISSUED UNDER THE INDUSTRIAL CONCILIATION ACT 1956 AS OF DECEMBER 1970

Determination No.	Industry, trade, undertaking, or occupation	Area
2.....	The work of motor vehicle driving in the cleansing department.	Municipal area of Durban.
3.....	Iron, steel, engineering and metallurgical Industries: Manufacture of "Cliscoe" windows, "Airlite" louvers and windows or door metal surrounds.	Republic of South Africa.
4.....	The work of traffic police, ambulance drivers/attendants and firemen.	Municipal area of Cape Town.
5.....	Operating passenger lifts in certain industries and trades.	Municipal areas of Bloemfontein, Johannesburg, and Pretoria.
6.....	Skilled work in the building industry.....	Urban areas in the Transvaal and Orange Free State.
7 ¹	Iron, steel, engineering and metallurgical industries: Certain work in the manufacture of refrigerators, washing machines, electric stoves, and holloware.	Republic of South Africa.
8.....	Clothing industry: Certain types of work as well as ratios on a racial basis.	Do.
9.....	The work of motor vehicle driving in the health department.	Municipal area of Springs.
10.....	Road passenger transport industry: The work of vehicle drivers and conductors.	The magisterial districts of the Cape, Wynberg, Simonstown, and Bellville.
11.....	Motor transport driving in certain industries.....	The magisterial districts of Odendaalsrus, Ventersburg, Virginia, and Welkom.
12.....	Abattoirs and the wholesale meat trade: The work of butcher handyman (certain types of work) and motor vehicle driving.	The Witwatersrand and the magisterial district of Pretoria.
13.....	Certain skilled work in the building industry.....	Certain urban areas in the Cape Province and Natal.
14.....	Liquor and catering trade: The work of barman in White public bars.	Municipal areas of Durban and Pietermaritzburg.
15.....	Motor transport driving in certain industries.....	The magisterial district of Durban excluding Bantu areas.
16.....	Motor assembly industry: Certain work as well as ratios on a racial basis.	Republic of South Africa.
17.....	Liquor and catering trade: Certain types of work for Coloured persons.	Certain magisterial districts in the Western Cape and Natal.
18.....	Footwear industry: Work which has been performed by Whites or Coloureds has been reserved for them.	Republic of South Africa.
19.....	Driving of heavy motor vehicles, road construction machines, earthmoving machines, etc., in connection with the construction of roads and streets and the preparation of premises for building work.	The Provinces of Transvaal, Orange Free State, and Natal.
20.....	Furniture industry: Work which has been performed by Whites has been reserved for them.	Republic of South Africa excluding the Transkei and any Bantu area.
21.....	Motor vehicle driving.....	Transvaal and Orange Free State.
22.....	Motor vehicle driving, Union Liquid Air Co. (Pty.) Ltd.....	Do.
23.....	Liquor and catering trade.....	Western Cape.
24.....	do.....	East London.
25.....	Motor vehicle driving.....	Division Council of Port Elizabeth.
26.....	Motor assembly industry.....	Magisterial District of Pretoria.

¹ The provisions of determinations Nos. 3 and 7 were suspended for the period of operation of the industrial council agreements concerned.

TABLE 15.—COMPARATIVE FIGURES ON INCOME

(1) According to World Bank figures for 1971, the per capita GNP for South Africa was \$375; for Blacks, \$105. (Africa Bureau *Fact Sheet* #13, August 1971. London.)

(2) In 1960, Blacks received 26 percent of the national income; Blacks' per capita income was 11.2 of Whites' per capita income. In 1969, the comparable figures were 19 percent and 8 percent. (*X-Ray*, January 1971. London.)

(3) In 1969, the estimated average monthly per capita income of Blacks was estimated to be \$10; for Whites, \$133. (*Financial Mail* (?) 1969.)

DECLARATION CONCERNING THE POLICY OF "APARTHEID" OF THE REPUBLIC OF SOUTH AFRICA

Whereas all Members of the International Labor Organization have, by the Declaration of Philadelphia embodied in the Constitution as a statement of the aims and purposes of the Organization, solemnly affirmed that "all human beings, irrespective of race, creed or sex, have the right to pursue both their material well-being and their spiritual development in conditions of freedom and dignity, of economic security and equal opportunity".

Whereas, by an instrument of ratification of the Constitution as amended in 1946, signed by the Prime Minister of the Union of South Africa at Pretoria on 12 June 1947, the Government of South Africa has undertaken "faithfully to perform and carry out" all the stipulations of the Constitution,

Whereas the Constitution provides that the International Labor Organization exists for the promotion of the objects set forth in the Preamble thereto and in the Declaration of Philadelphia,

Whereas the Government of the Republic of South Africa has not merely failed to co-operate in promoting the objects set forth in the Preamble to the Constitution and in the Declaration of Philadelphia, but has promulgated and is practicing the inhuman policy of *apartheid*, which is wholly incompatible with the aims and principles of the Constitution and the Declaration of Philadelphia, thus creating an alarming situation,

Whereas the Declaration of Philadelphia affirms that the principles set forth therein are fully applicable to all peoples everywhere and recognizes that their implementation is a matter of concern to the whole civilized world,

Whereas the application of the principle of equal opportunity for all human beings, irrespective of race, has therefore ceased to be solely the domestic concern of the Republic of South Africa, and whereas the Security Council of the United Nations, by Resolution S/5471, adopted unanimously on 4 December 1963, has affirmed the conviction that the situation in South Africa is seriously disturbing international peace and security,

Whereas the Republic of South Africa persistently and flagrantly violates this principle by means of legislative, administrative and other measures incompatible with the fundamental rights of man, including freedom from forced labor, freedom of association, and freedom of choice of employment and occupation,

Whereas such persistent and flagrant violation of the principle has been established by the International Labor Organization by inquiries relating to forced labor, freedom of association and freedom from discrimination in respect of employment and occupation,

Whereas, for instance, the United Nations-International Labor Organization *Ad Hoc* Committee on Forced Labor has found that there exists in South Africa "a legislative system applied only to the indigenous population and designed to maintain an insuperable barrier between these people and the inhabitants of European origin", that "the indirect effect of this legislation is to channel the bulk of the indigenous inhabitants into agricultural and manual work and thus to create a permanent, abundant and cheap labor force" and that in this sense "a system of forced labor of significance to the national economy appears to exist in the Union of South Africa",

Whereas, moreover, the Governing Body Committee on Freedom of Association has found that the provisions of the Industrial Conciliation Acts and Native Labor (Settlement of Disputes) Act involve discrimination against workers on grounds of race which is incompatible with the principle that workers without distinction should have the right to establish and, subject only to the rules of the organization concerned to join organizations of their own choosing without previous authorization and that all workers should enjoy the right of collective bargaining,

Whereas the Committee of Experts on the Application of Conventions and Recommendations has likewise found, on the basis of information furnished by the Government of South Africa and the relevant legislation, that the legislation and practice of South Africa establish extensive discrimination in employment and occupation on grounds of race,

Whereas the International Labor Conference, by a resolution adopted on 29 June 1961, condemned the racial policies of the Government of the Republic of South Africa and called upon the Republic of South Africa to withdraw from the International Labor Organization until such time as the Government of the said Republic abandons *apartheid*,

Whereas South Africa, having declined the invitation of the International Labor Conference to withdraw from membership of the Organization, has nevertheless, as the result of discussions and developments at the 1963 Session of the Conference and the decisions taken by the Governing Body in June 1963, November 1963 and February 1964, stated in a communication dated 11 March 1964 its decision to withdraw from the Organization,

Whereas paragraph 5 of article 1 of the Constitution of the International Labor Organization provides as follows:

"No Member of the International Labor Organization may withdraw from the Organization without giving notice of its intention so to do to the Director-

General of the International Labor Office. Such notice shall take effect two years after the date of its reception by the Director-General, subject to the Member having at that time fulfilled all financial obligations arising out of its membership. When a Member has ratified any international labor Convention, such withdrawal shall not affect the continued validity for the period provided for in the Convention of all obligations arising thereunder or relating thereto."

Whereas South Africa continues to violate her undertaking to respect the right of "all human beings irrespective of race, creed or sex" to "pursue both their material well-being and their spiritual development in conditions of freedom and dignity, of economic security and equal opportunity",

Whereas the United Nations Declaration on the Elimination of All Forms of Racial Discrimination has called for an end to "be put without delay to governmental and other public policies of racial segregation and especially policies of *apartheid*, as well as all forms of racial discrimination and separation resulting from such policies",

Whereas the Security Council of the United Nations by Resolution S/5471 adopted unanimously on 4 December 1963 expressed "the firm conviction that the policies of *apartheid* and racial discrimination as practiced by the Government of the Republic of South Africa are abhorrent to the conscience of mankind and that therefore a positive alternative to these policies must be found through peaceful means" and condemned "the non-compliance by the Government of the Republic of South Africa with the appeals contained in" the resolutions addressed to it by the General Assembly and the Security Council,

Whereas some member States have already taken practical measures in pursuance of certain other decisions adopted by the United Nations to compel South Africa to renounce its odious policy of *apartheid*,

The General Conference of the International Labor Organization,

Determined to fulfill its responsibility to promote and take its part in securing the freedom and dignity of the people of South Africa, and to oppose the policy of *apartheid* practiced by the Government of South Africa.

Acting as spokesman of the social conscience of mankind.

Reiterating that a government which deliberately practices *apartheid* is unworthy of the community of nations but nevertheless making another appeal to the Government of South Africa to abandon its disastrous policy and to cooperate with employers' and workers' organization in placing the relations between the various elements of the population of South Africa, and the relations between the people of South Africa and the rest of the world, on the basis of the equality of man, justice for all, good neighborliness and mutual respect—

1. Solemnly reaffirms its fidelity to the fundamental principle of the Declaration of Philadelphia, according to which "all human beings, irrespective of race, creed or sex, have the right to pursue both their material well-being and their spiritual development in conditions of freedom and dignity, of economic security and equal opportunity".

2. Emphatically reaffirms its condemnation of the degrading, criminal and inhuman racial policies of the Government of the Republic of South Africa, which policies are a violation of fundamental human rights and thus incompatible with the aims and purposes of the I.L.O.

3. Calls upon the Government of South Africa to recognize and fulfill its undertaking to respect the freedom and dignity of all human beings, irrespective of race, and to this end;

to renounce without any further delay its policy of *apartheid* and, in like manner, to repeal all legislative, administrative and other measures which are a violation of the principle of the equality and dignity of man and a direct negation of the inherent rights and freedoms of the peoples of South Africa;

to establish and consistently to pursue the policy of equal opportunity and treatment for all, in employment and occupation, irrespective of race;

to repeal, without delay, the statutory provisions which provide for compulsory job reservation or institute discrimination on the basis of race as regards access to vocational training and employment;

to repeal, without delay, all legislation providing for penal sanctions for contracts of employment, for the hiring of prison labor for work in agriculture or industry, and for any other form of direct or indirect compulsion to labor, including discrimination on grounds of race in respect of travel and residence, which involves racial discrimination or operates in practice as the basis for such discrimination;

to repeal, without delay, the statutory discrimination on grounds of race in respect of the right to organize and to bargain collectively, and the statutory prohibitions and restrictions upon mixed trade unions including persons of more than one race, and so to amend the Industrial Conciliation Acts that all workers, without discrimination of race, enjoy the right to organize and may participate in collective bargaining.

4. Invites the Governing Body to exercise its constitutional power under article 19(5)(e) and (6)(d) of the Constitution by requesting the Government of South Africa to report annually the position of its law and practice in regard to the matters dealt within the Forced Labor Convention, 1930, the Abolition of Penal Sanctions (Indigenous Workers) Convention, 1955, the Abolition of Forced Labor Convention, 1957, the Freedom of Association and Protection of the Right to Organize Convention, 1948, the Right to Organize and Collective Bargaining Convention, 1949, and the Discrimination (Employment and Occupation) Convention and Recommendation, 1958.

5. Decides to consider each year a special summary of such reports to be submitted to the Conference by the Director-General in pursuance of article 23 of the Constitution.

6. Invites the Governing Body to request the Director-General to follow the situation in South Africa in respect of labor matters and to submit every year for consideration by the Conference a special report concerning the application of the present Declaration including any necessary recommendations concerning any measures which should be adopted with a view to bringing to an end the policy of apartheid in the Republic of South Africa.

7. Makes a pressing appeal to the governments, employers and workers of all States Members of the International Labor Organization to combine their efforts and put into application all appropriate measures to lead the Republic of South Africa to heed the call of humanity and renounce its shameful policy of *apartheid*.

8. Reaffirms its resolve to cooperate with the United Nations in seeking and guaranteeing freedom and dignity, economic security and equal opportunity for all the people of South Africa.

Mr. DIGGS. Thank you, Mr. Secretary.

Before we turn to questions, we thought we would hear the testimony of the other two witnesses, because there is an interrelation here in pursuing the objectives of the subcommittee that would be better served if questions were at the end, if that is all right with my colleague.

Mr. VANDER JAGT. Certainly.

Mr. DIGGS. We would like now to hear from Mr. Sean D. Gervasi of the Institute of Commonwealth Studies at Oxford University.

I don't have any further information about the gentleman's background, but if he will provide it for the record, we will include it for the benefit of the members.

STATEMENT OF SEAN D. GERVASI, RESEARCH OFFICER IN ECONOMICS, INSTITUTE OF COMMONWEALTH STUDIES, OXFORD UNIVERSITY, ENGLAND

BIOGRAPHY

Educated at University of Geneva, Oxford University and Cornell University. Former staff economist, Bureau of the Budget. Taught at London School of Economics and Oxford University. Presently attached to Queen Elizabeth House, Oxford University. Consultant to United Nations Special Committee on Apartheid. Author of "Industrialization. Foreign Capital and Forced Labor in South Africa" (United Nations, 1970) and numerous articles on southern Africa and economic affairs.

Mr. GERVASI. Thank you, Mr. Chairman.

The policy of the U.S. Government on South Africa, and toward the question of apartheid, is almost totally incoherent. By "policy"

here, I mean words and deeds. Any government will be judged by both. And there naturally has to be some consistency between the two.

This is precisely where the problem arises whenever the South African question is considered.

The rhetoric of the U.S. Government is unimpeachably liberal and humanitarian. As President Nixon put it in his report to Congress on February 18, 1970:

Clearly there is no question of the United States condoning, or acquiescing in, the racial policies of the white-ruled regimes.

This theme is stated again and again by government spokesmen. It is not exactly puzzling that we are told so often. It is a sore point in international affairs, especially in Africa.

And is there an alternative? Could any U.S. Government proclaim its support for the racist regime of South Africa?

Rhetoric, however, is one thing, and deeds are another. The practice of the United States, and of U.S. corporations in southern Africa, is one which serves to strengthen the position of white supremacy in South Africa. We invest millions in South Africa, we trade with that country, and we maintain the normal relations which exists between friendly countries.

South Africa is an integral, and important, part of the free world economy. And it is critically dependent upon the maintenance of normal economic relations with the Western countries.

The prosperity of the South African economy is no more than a paper prosperity. The vast mass of the people live in abject poverty. But prosperity is real enough to underwrite the power of the white minority. It would, however, collapse if the growth of the economy should falter.

Investment and trade with the Western countries play a crucial role in sustaining South Africa's economic growth. They therefore play a crucial role in sustaining apartheid.

All this has been freely admitted by various Western spokesmen. The British Foreign Secretary made the point during a debate on arms for South Africa which took place in the House of Commons on July 22, 1970.

Robert Smith, Deputy Assistant Secretary of State for African Affairs, made it again in a recent speech:

There is no doubt that foreign investment strengthens the regime and, to some extent, supports its racial policies * * *

Much more needs to be said about the nature of this implicit assistance to the South African Government. This question has been examined at length in "Industrialization, Foreign Capital and Forced Labor in South Africa," a study published by the United Nations, New York, in 1970.

For the moment, however, it is enough to observe that the fact of such support is not in dispute.

The United States could control and restrict trade and investment with South Africa. It could do much more to apply pressure upon the government of that country. Yet it chooses not to. This choice has far-reaching and important consequences. It provides the apartheid regime with economic, military, political, and psychological aid where it might have none.

The practice of the U.S. Government is, therefore, not neutral. And our Government is caught in an exceedingly serious contradiction. It says one thing and does another. It condemns apartheid in speeches and helps that same system to survive. Since deeds must inevitably count more than words in any policy, many people are coming to the conclusion that the words are a sham.

The U.S. Government rejects the idea of assisting those who would liberate southern Africa. It rejects as well the policy of attempting to isolate South Africa which is pursued by independent African states. It strenuously denies, however, that its rejection of these alternatives implies acceptance of the South African regime.

The Government seeks to avoid the charge of inconsistency by arguing that it has found a fourth alternative which is in keeping with the principles upon which U.S. foreign policy is supposed to stand. This policy may be called "dialog."

Apartheid, we are told, cannot be tolerated in any of its forms. But the way to end apartheid is not by the kind of struggle which the American colonies waged against the British Empire. "This is the road to violence." And "even a sympathetic observer finds it difficult to see this path as being either right or effective."

Here, again, I am quoting the Assistant Secretary of State for African Affairs, David Newsom.

The best way to end apartheid is through peaceful change. The United States must do everything it can to promote change within the system. To this end the Government is now pursuing a policy which it calls "communication," but which in order to clarify matters we ought to call "dialog."

Communication or dialog will bring people to ask themselves questions. It means that people will be able to press and test the system. White South Africans will learn about Black Africa and perhaps come to a better understanding of blacks in general.

Dialog is a gradualist approach. By waiting and by communicating, the U.S. Government and U.S. corporations in South Africa can exercise an influence for good, even within the system. This new policy thus seizes upon the possibility of peaceful change.

That is the best way for South Africa. It is a policy which will help to bring the day when the black in South Africa as well as in the rest of Africa can walk with his head upright and have a role in the determination of his own and his nation's destiny.

This is how Assistant Secretary Newsom describes the aim of our policy.

I have cited these official statements at length because they seem so incredible. There is, of course, an implicit argument in most of them which merits some examination. This is the argument that economic growth can eventually eliminate most of the worst features of apartheid.

It is a very popular argument in South Africa among the more sophisticated apologists of the regime. I shall say more about it later. What stands out about the statements considered above, however, is that they are vague and defensive. They have a familiar ring of wishful thinking about them.

Policymakers seem to have lost sight of the real issue in South Africa. And the failure to define precisely what the trouble is has

made it possible to present policies which have almost no content as some sort of solution.

The issue is not the ignorance of the Afrikaners. Nor is it the business practices of foreign firms. The issue is the system of white supremacy called apartheid. What nonwhites in South Africa want is an end to that system. White supremacy, whose foundation is a system of institutions, cannot be reconciled with the demands of non-white South Africans for freedom and equality.

What we appear to have forgotten in the United States is that it is this system of institutions which is the source of the trouble. An institutional system must serve certain purposes and exclude others. The system of apartheid is designed to insure white supremacy.

It would be against the fundamental nature of apartheid to permit the kinds of changes which some hope for. No doubt, some concessions and adjustments will be made, if only as a sop to international opinion. But a system which has been created to insure white supremacy cannot turn itself into a multiracial egalitarianism. The people who hold power do not want that, and they will not permit it.

South Africa is a white supremacist society. That society rests upon a particular form of political and economic organization. It is a form of organization by which whites are able to impose certain conditions of life and work on the vast mass of the population.

It is a system in which the minority control the majority almost without let or hindrance. This control has from the beginning been used for the economic gain of the white minority. Indeed, the system of apartheid was developed for the purpose of securing the maximum gains for whites. This has meant the systematic organization and use of nonwhite labor for the benefit of whites.

In the beginning, long before South Africa even began to industrialize, the superior power of whites was used to extract labor from the native Africans. Most of the laws and customs of the land had only one object: to secure a cheap and reliable supply of African workers for whites.

In the 19th century, most of these workers were at first employed in agriculture. As the mining boom developed, however, increasing numbers of Africans were sent to work in the gold mines. The process of industrialization produced many changes. It brought many people to the cities. It changed the pattern of demand for labor. It tended to raise the level of wages.

But it did not fundamentally change the system of apartheid. If anything, that system has become more oppressive.

It is important to understand why this happened, why apartheid failed to break down under the pressure of industrial growth in this century. The basic reason, of course, is that throughout the process of industrialization, the white minority has retained total control.

"The South African way of life" was from the beginning one of master and servant, a society of marked inequalities in which nonwhites were forced to live in poverty and to do the bidding of their masters. Apartheid has survived the industrial revolution because the white minority has been able to manage change. It has been able to insure that change did not disrupt "the South African way of life."

From the beginning, apartheid has used two techniques for achieving its ends. The first has been compulsion. Whites have made it ex-

ceedingly difficult for Africans and other nonwhites to be economically independent. They have engineered such drastic changes in their condition that nonwhites have been compelled to go to work for them.

Second, whites have controlled the majority. Wages, conditions of work, and so on have been determined unilaterally. Nonwhites have had no power to influence the terms of their employment. Nonwhites, and Africans in particular, have thus found themselves completely at the mercy of the white minority.

Control of the labor force at one time involved no more than the regulation of conditions in the reserves and the white rural areas. As industry began to change South Africa, control had to be extended to the industrial areas, and therefore the cities, as well.

Whites used their control of the situation to preserve inequalities in wealth and income, and to deny nonwhites opportunities for changing their material prospects. In the face of economic growth, the South African Government extended apartheid and tightened its provisions so that change would take place within their system. Since 1948, apartheid has been rationalized and refined.

The essence of the newly rationalized apartheid system is that it makes it impossible for Africans to be anything but cheap labor. This is now done in two ways. Africans have, first of all, been denied the right of permanent residence in almost all areas but those designated by the Government as African "homelands." Since these areas are very poor and underpopulated, many of their inhabitants are forced to migrate to "white areas" in search of work. If they do not, they and their families may starve.

In "white areas," Africans have no status, no rights, and no control over the conditions and terms of their employment.

It is in these "homelands," of course, that Africans are supposed to benefit from the opportunities for "separate development." But the idea of any real development in the reserves, where more than 5 million Africans live, is absurd, and the South African Government knows that.

The reserves are largely poor agricultural areas, and their economies cannot even provide subsistence for the total population assigned to them. Most people in the reserves are living on the margin of starvation. The known figures for child mortality and the incidence of disease confirm this.

So citizenship in a "homeland," if one must live there, is tantamount to a sentence to starve, for many.

The whole purpose of the laws governing the residence of Africans is to deny them the right of an independent existence. And these laws are an integral part of the system of apartheid which some naively expect to change by waiting and "communicating."

The denial of this possibility, which is as fundamental as anything can be, means that Africans are compelled to offer their labor to white employers. They would otherwise be without a livelihood. The laws which relegate Africans to the reserves, or Bantustan, are therefore, part of a larger plan for securing a gigantic reserve army of labor.

The Government is much less interested in the separation of the races than in securing a cheap labor supply. Whites in South Africa have always been perfectly conscious of what they were doing. Dr. Malan once pointed out quite candidly that total separation of the

racess was impracticable. "Our whole economic structure is to a large extent based on nonwhite labor." This statement he made in the House of Assembly debates [(Hansard), April 12, 1950, col. 4142].

What, precisely, happens to Africans when they do leave their "homelands"? Some Africans do still qualify in their own right for residence in "white areas." But their number is being constantly whittled down. More and more the Government is trying to insure that Africans looking for work have migrant status. For it is this status of the African which makes him so vulnerable.

As a citizen of a faraway "homeland," he has no real rights in a "white area." He may enter one and stay in one only for the purpose of obtaining a labor contract. He is obliged to return to his "homeland" upon its expiry. So he is from the very start enormously insecure.

The relegation of Africans to "homelands" provides one important element of compulsion under apartheid. Beyond that, the life of Africans in "white areas" is regulated down to the minutest detail. Migrant workers do not even have the comfort of living with their families, whom they must leave behind in the reserves.

That is only a token of the totally inhuman discipline to which the migrant must submit. Africans must register with labor bureaus. They must accept jobs offered them. They must carry passbooks with a record of their employment, to be produced on demand.

Africans must have permits to stay, to move, to work, to change jobs, to do anything. In short, they live in a police state, and it is ruthlessly administered.

The migrant worker's residence and movements are closely controlled. At the same time, he is denied the rights and opportunities which most people have in other countries to determine the conditions and terms of his employment and to better himself.

African workers are deprived of freedom of association and elementary trade union rights. African trade unions are illegal. Strikes by Africans are illegal. Breaches of contract by Africans are a criminal offense. Africans may not participate in the negotiation of industrial agreements applicable to them.

In short, they have no freedom to organize and to protect their interests as workers.

There is no escape from this situation by education or self-improvement. A few very fortunate people do manage to obtain higher skills and education, but the mass of Africans have no chance of that. The control of African education rests entirely in the hands of the white government.

Per capita expenditure on African education, which was low enough, has been falling. The proportion of Africans enrolled in primary school is minuscule. The conditions of schooling are inadequate in every respect. There are not enough teachers or schools.

The situation of higher education is roughly the same. There are nearly 15 million Africans in South Africa. In the academic year 1968-69, only 277 of them received higher education degrees and diplomas. There were far fewer whites, and there were more degrees and diplomas granted to whites in that same year.

It should now be clear that apartheid is not simply a reflection of racial antagonism on the part of the whites. It is a system by which the white community controls the vast majority of the population. Africans have no alternative but to join the vast pool of unskilled

workers, which provides most of the labor for the South African economy.

They are compelled to join the pool by the two blades of the apartheid policy. The Government's Bantustan policy forces them to leave the reserves. Influx controls, work regulations, and the like force them to accept whatever work is offered. Apartheid is, therefore, a system of forced labor.

Forced labor is cheap labor. The statistics prove this. African workers in South Africa are quite defenseless and have no means of insuring that they receive adequate and fair wages. Africans are not even "employees" in law. Their wages are fixed for them by a Wage Board.

The real power, of course, resides with the Minister of Labor. He may approve or disapprove any recommendation made by the Wage Board. The Minister has absolute authority. If he approves a wage determination, it is gazetted and becomes binding on employers and employees.

This is, in other words a totally centralized and arbitrary manner of determining wages. The material conditions of millions of workers are decided upon by people who oppress them. Workers cannot influence these decisions and have no alternative but to accept them.

It is hardly surprising that wages for Africans in South Africa should be as low as they are. The wages received vary from roughly 20 to about 60 rand per month, depending upon the industry. In many instances, wages are not enough to provide an urban family with subsistence.

Family incomes on the whole leave many people living below the official poverty datum line. Even in the cities and industrial areas, therefore, the majority of Africans live in a situation of dire need. Since this situation is under the absolute control of the Government, it is what it is because they have willed it.

We are not dealing here with a poverty brought about by forces partially out of the sphere of Government control. If millions of Africans live in poverty and misery, that is policy. It is the concrete meaning of apartheid.

It is now possible to understand the position taken by the United Nations-International Labor Organization Ad Hoc Committee on Forced Labor in 1953. The committee examined the whole range of apartheid legislation then in existence and came to the following conclusions. With your permission, Mr. Chairman, I would like to quote those conclusions.

With regard to the economic aspect of our terms of reference, the Committee is convinced of the existence in the Union of South Africa of a legislative system applied only to the indigenous populations and designed to maintain an insuperable barrier between these people and the inhabitants of European origin.

The indirect effect of this legislation is to channel the bulk of the indigenous inhabitants into agricultural and manual work and thus to create a permanent, abundant, and cheap labor force.

Industry and agriculture in the Union depend to a large extent on the existence of this indigenous labor force whose members are obliged to live under the strict supervision and control of the State authorities.

The ultimate consequence of the system is to compel the native population to contribute, by their labor, to the implementation of the economic policies of the country, but the compulsory and involuntary nature of this contribution results from the peculiar status and situation created by special legislation applicable to the indigenous inhabitants alone, rather than from direct coercive measures

designed to compel them to work, although such measures, which are the inevitable consequence of this status, were also found to exist.

It is in this indirect sense, therefore, that, in the Committee's view, a system of forced labor of significance to the national economy appears to exist in the Union of South Africa.

That, of course, was written in 1953.

This is the system which U.S. policymakers are talking so casually of influencing by "communication." The idea would seem, in the face of historical experience, preposterous. Apartheid is the very essence of South African society. White supremacy cannot be expected to turn itself upside down voluntarily, to become something altogether different from what it is.

No one who understands anything about power can believe in such a dream. Forced labor is the source of white strength and wealth in South Africa. Can whites be expected to do away with it when they have benefited so much from it and lied to themselves about that fact?

If those who espouse the policy of "communication" mean that they hope for small changes within the system of apartheid, then they should say so quite explicitly. They should abandon the tactic of lavish promise by implication. They should say what apartheid is and that they cannot really expect to see much change in that system.

That would be a forthright position. But it would obviously be one which they would be hard put to defend. The critics of our involvement with apartheid cannot be satisfied by the prospect of a few wage rises and a few more African executives and scholarship programs. That is not the issue.

The issue is the whole system of apartheid. The people of southern Africa want it ended, many peoples of the world want it ended, and the United Nations want it ended. It is time that people in the United States got down to talking about this and not about marginal changes in a barbarous system which we help to support.

It is difficult to understand how anyone can really believe in the claims which are put forward for the policy of communication or dialog. It is doubtful that even official spokesmen would interpret it as meaning more than that we hope for improvements—except, perhaps, during their more fanciful flights of rhetoric.

But improvements cannot be very great, and they are not the issue. If policymakers know that our policy will not help to eliminate apartheid, if they know that the system reviewed above will continue to dominate an important part of Africa, then we are left with an interesting set of questions. Is our policy in practice one of acceptance? And, if so, why?

Mr. DIGGS. I thank the gentleman for his scholarly presentation.

Before we move on to our final witness, could you tell us for the record a little something about the Institute of Commonwealth Studies at Oxford? And we note with interest that you have been a consultant to the United Nations in this general field. So would you expand a little bit about yourself for the record?

Mr. GERVASI. Yes, sir. Well, the Institute of Commonwealth Studies is an institute of Oxford University concerned with teaching and research in the area of development, particularly in the former Commonwealth countries.

I have been the research officer of the institute concerned with southern African questions for about 5 or 6 years now, and I have

been doing primarily development work. I was originally not in that line of work; I used to work in the Bureau of the Budget as a staff economist. I have also taught in the United States, being an American citizen, but I have been living and working in England for some time. I taught for 3 years at the London School of Economics, before coming to the University of Oxford in 1966.

Our work at the institute is expanding now, and we are concerned particularly with what is happening in southern Africa. We have started a substantial research project on, roughly speaking, the future of southern Africa, on which I am now engaged.

As you know, the Division of Political and Security Council Affairs at the United Nations has a special unit which deals with these questions, as well as other entities in the organization, like the Council for Namibia, and they are very involved at the moment in trying to understand exactly why it is that western policy—I think what I have said about American policy applies generally to western policy—displays this peculiar schizophrenia, a fact which you noted in your 1969 report.

You mentioned a study which I wrote for the U.N. in 1970 on "Industrialization, Foreign Capital, and Forced Labor in South Africa," and a number of papers, one which is relevant in analyzing the credibility of the present policy of communication. And there is as well a paper which was done for the special session of the Special Committee on Apartheid in March 1971, called "Poverty, Apartheid and Economic Growth."

I think the rationale which is often offered for the kind of policy which we are espousing at the moment—and which is also the policy of the British Government—is now being heavily attacked. It really lacks credibility. I think no one any longer expects that apartheid is going to disappear as a consequence of the mysterious and benevolent effects of economic growth.

The very history of South Africa refutes this notion. The economy has progressed with amazing speed, and yet the system is far more oppressive than it was, say, in 1930.

Mr. Diggs. Thank you.

Our final witness is Mr. Douglas P. Wachholz, who is presently law clerk to Judge Robert R. Merhige, Jr., U.S. District Court for the Eastern District of Virginia, and has had a relatively long interest in the whole question of international law. He counts among his credentials many outstanding items, any one of which would fully qualify him to associate on this panel as a witness today.

You have a prepared statement, sir, with which you were assisted by Mrs. Emma Jones of the Howard Law School.

You may proceed.

STATEMENT OF DOUGLAS P. WACHHOLZ, ATTORNEY, RICHMOND, VA.

BIOGRAPHY

Occupation: Law Clerk to Judge Robert R. Merhige, Jr., U.S. District Judge for the Eastern District of Virginia.

Education: B.A., Wesleyan University, Middletown, Conn. (1968). J.D., University of Virginia School of Law (1971). Certificate, International Institute for the Study of Comparative Law (1971).

Relevant Experience: Member, American Society of International Law (Executive Council 1970-71; Nominating Committee, 1971-72). Panel Member, Human Rights and International Implementations, ASIL. Chairman, Roundtable on "The Dilemma of Foreign Investment in South Africa," ASIL Annual Meeting, 1971. Intern, Office of the Assistant Legal Adviser for African Affairs, 1970. President, Association of Student International Law Societies, 1970-71. President, J. B. Moore Society of International Law, University of Virginia School of Law, 1970-71. Executive Editor, *Virginia Journal of International Law*, 1970-71.

Mr. WACHHOLZ. Yes, sir. I would like to introduce Mrs. Jones, who will help me if I stumble.

I would like to also point out, Mr. Chairman, that this report is somewhat technical in nature and has a lot of footnotes. I have tried to minimize the technicalities by sticking everything in the footnotes, and if something is not adequately supported, please interrupt me and I will refer to the footnotes. But I would hope that the footnotes would also be entered into the record.

Mr. DIGGS. Without objection, it will be so ordered.

Mr. WACHHOLZ. Mr. Chairman and members of the committee, the question of compulsory labor has long been a subject of concern within the international community.¹ The U.S. Congress recognized this and took a very positive action by passing section 307 of the Tariff Act of 1930.

This section imposed a trade barrier on products which were made by convict, forced, or indentured labor under penal sanction.² Let me read that right now from the footnotes so that the committee will be aware of it. This also has been referred to as 19 U.S.C. 1307, that is its codified form. It goes as follows:

All goods, wares, articles, and merchandise mined, produced, or manufactured wholly or in part in any foreign country by convict labor or/and forced labor or/and indentured labor under penal sanctions shall not be entitled to entry at any of the ports of the United States, and the importation thereof is hereby prohibited, and the Secretary of the Treasury is authorized and directed to prescribe such regulations as may be necessary for the enforcement of this provision.

The provisions of this section relating to goods, wares, articles, and merchandise mined, produced, or manufactured by forced labor or/and indentured labor, shall take effect on January 1, 1932; but in no case shall such provisions be applicable to goods, wares, articles, or merchandise so mined, produced, or manufactured which are not mined, produced, or manufactured in such quantities in the United States as to meet the consumptive demands of the United States.

"Forced labor," as herein used, shall mean all work or service which is exacted from any person under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily.

¹ Slavery Convention, 1926: Protocol Amending the Slavery Convention, A/794 (VIII), 1953; Supplementary Convention on the Abolition of Slavery, the Slave Trade, and Institutions and Practices Similar to Slavery, S/608 (XXI), 1956; Forced Labour Convention, 1930 (No. 29); Abolition of Forced Labour Convention, 1957 (No. 105).

² Tariff Act of 1930 § 307, 19 U.S.C. 1307 (1964) § 1307. Convict-made goods; importation prohibited.

All goods, wares, articles, and merchandise mined, produced, or manufactured wholly or in part in any foreign country by convict labor or/and forced labor or/and indentured labor under penal sanctions shall not be entitled to entry at any of the ports of the United States, and the importation thereof is hereby prohibited, and the Secretary of the Treasury is authorized and directed to prescribe such regulations as may be necessary for the enforcement of this provision. The provisions of this section relating to goods, wares, articles, and merchandise mined, produced, or manufactured by forced labor or/and indentured labor, shall take effect on January 1, 1932; but in no case shall such provisions be applicable to goods, wares, articles, or merchandise so mined, produced, or manufactured which are not mined, produced, or manufactured in such quantities in the United States as to meet the consumptive demands of the United States.

"Forced labor," as herein used, shall mean all work or service which is exacted from any person under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily.

We are here today to show this subcommittee that the U.S. Customs Bureau is long overdue in fulfilling its congressionally imposed responsibility to thoroughly investigate this country's importers' continuing partnership in the exploitation of South Africa's non-European population.³

We will show further that the existence of these laws establishes legal structure designed to control every aspect of the labor conditions of nonwhite workers in order to force them into a diabolical system of quasi-slave labor.⁴

We will show further that the existence of these laws establishes a prima facie case that forced, convict, and indentured labor under penal sanction are presently being used to mine, produce, or manufacture goods which are at this time being imported into the United States from South Africa in direct violation of the explicit terms of section 307, and that the Customs Bureau has a legal duty to immediately investigate⁵ to determine why the importation of all South African goods should not be prohibited.

CONVICT LABOR

The application of the statute is clearest with regard to convict labor.⁶ This proscription speaks to the use of prison labor in private economic enterprises at less than free market wages.⁷

There are in force in South Africa a great many statutes which permit the easy apprehension of Africans and their subsequent use in convict labor.⁸ Under the Prisons Act of 1959, the Commissioner of Prisons may contract with any public body or private person for the employment of prisoners on such terms as may be agreed upon by the parties.⁹

In a report submitted to the International Labor Office in 1961, the South African Government stated that "a limited number of prisoners who are surplus to the demands of State Departments is made available to private persons and organizations," and that "prison labor for private use is confined mainly to agriculture where prisoners are employed under congenial conditions and under the sole and strict supervision of the Department of Prisons."¹⁰

³ U.S. imports from South Africa totaled 332,808,334 rands (rand is worth US\$1.40) in 1968. *U.S. Department of Commerce, Overseas Business Reports*, Pub. No. ORB 69-69 (1969).

⁴ See section on "forced labor," *infra* at 4-7.

⁵ Regulations made pursuant to sec. 307 are found in 19 C.F.R. §§ 12.42-45 (1966).

⁶ The lone application of sec. 307 occurred in 1953 in connection with the use of convict labor when the Customs Bureau determined that prisoners were being used to produce furniture in Ciudad Victoria, Tamaulipas, Mexico. *T.D.* 53408, 88 *Treas. Dec.* 416 (1953). In 1953 the finding of the use of convict labor was expanded to include clothes hampers and palm leaf bags. *T.D.* 54725, 93 *Treas. Dec.* 517 (1958).

⁷ The primary thrust of the statute as originally drafted dealt with convict labor. Sec. 307 was derived from sec. 24 of the Tariff Act of 1894, which prohibited imports made by convict labor. 28 Stat. 211, act of July 24, 1897, Ch. 11 § 31. That section was reenacted in identical language in four pieces of tariff legislation from 1897 to 1922. 30 Stat. 211, act of July 24, 1897, Ch. 11 § 31; 36 Stat. 211, act of Aug. 5, 1909, Ch. 6 § 14; 38 Stat. 195, act of Oct. 3, 1913, Ch. 16 § IV, 1; 42 Stat. 937, act of Sept. 21, 1922, Ch. 356, title III, § 307.

⁸ See section on Forced Labor, *infra*, at 4-7.

⁹ Section 75 (1).

¹⁰ Report on the position of national law and practice in regard to the matters dealt with in the Forced Labor Convention, 1930, submitted under art. 19 of the ILO Constitution. *International Labor Office, I.L.O. Programme for the Elimination of "Apartheid" in Labour Matters in the Republic of South Africa* 23 (1964). See also *Infringements of Trade Union Rights in Southern Africa*, Report submitted to the Economic and Social Council by the *Ad Hoc* work group of experts appointed by the Commission on Human Rights (U.N. 1970), at 16.

In 1969, the Customs Bureau dealt with a complaint on the use of convict labor in the deciduous fruit industry of South Africa. The case was handled "diplomatically" by the U.S. Government and no imports were prohibited.¹¹ Certainly a more thorough investigation by customs authorities is warranted.

INDENTURED LABOR UNDER PENAL SANCTION

The scope of this category of prohibited labor is developed in the congressional debates of 1930—that probably should be 1929. Senator Blaine, the sponsor of the amendment, concluded a discussion on the meaning of the terms by stating :

I am of the opinion that there is no question but that the phrase "indentured contract with penal sanctions"¹² applies to just one type of employment; that is, where the worker is employed under a contract for the violation of which he may be punished by criminal process.

The widespread use of indentured labor under penal sanction in South Africa is evident from the legislation itself. Under the Bantu Labour Act of 1964, a "native" worker employed in mines or works (any other location where machinery is used) is subject to a fine of 50 rand or 3 months imprisonment for certain breaches of contract.¹³

Penal sanctions for breaches of contract may also be imposed under the Bantu Building Workers Act of 1951,¹⁴ Masters and Servants Acts of various provinces,¹⁵ The Mines and Works Act of 1956,¹⁶ and the Coloured Cadets Training Act of 1967.¹⁷

Again, there is sufficient cause for an extensive Customs Bureau inquiry into the relationship of the above-listed laws to the production, manufacture, or mining of goods which are eventually exported to the United States.

FORCED LABOR

Section 307 defines forced labor to be "all work or service which is exacted from any person under the menace of any penalty for its non-performance and for which the worker does not offer himself voluntarily."¹⁸

¹¹ During a conversation on April 19, 1971, with Mr. Paul McCarthy, Assistant Director, Restricted Merchandise, Division of Entry Procedures and Penalties of the Bureau of Customs, he indicated that there were complaints received about the importation of deciduous fruit harvested by convict labor in South Africa but that the information was classified.

¹² *Id.* See also, Article 1, I.L.O. Convention No. 69, concerning penal sanctions for breaches of contracts of employment by indigenous workers (1939).

¹³ For example, an African deserts or absents himself from his place of employment or fails to carry out the terms of his contract, renders himself unfit for employment, refuses to obey any lawful command, uses insulting or abusive language to the employer, etc. Sec. 15. Similar penalties are in effect for an African who has been recruited by a labor agent to enter the service of a member of a group of employers and subsequently refuses. Sec. 13(6) (b).

¹⁴ Secs. 10(7) and 33.

¹⁵ For example, the Cape Masters and Servants Act of 1856, as amended, on which corresponding legislation in the other provinces was based, provides varying penalties for a number of offenses by servants, including failure to commence service without lawful cause, absence without leave, desertion, neglect of duty, refusal to obey lawful orders, and abusive language. Act No. 18 of 1873, sec. 2. If, on discharge from prison, a worker refuses to return to resume his service, he may be imprisoned for further monthly periods up to a maximum of 6 months. Cape Masters and Servants Act of 1856, ch. V, sec. 10.

¹⁶ The act prescribes penal sanctions for breach of rules made, *inter alia*, "for the maintenance of order and discipline" in a mine or works. Sec. 13.

¹⁷ Sec. 19 confers vast power on the authorities for maintaining discipline, and sec. 27 provides for penal sanctions, including imprisonment for a period up to 3 years, for various offenses under the act, such as failure to register or to report for training, refusal, or failure to undergo to the best of one's ability any required training, or absconding from a training center.

¹⁸ See Tariff Act of 1930, sec. 307, *supra*, note 1. See also, I.L.O. Forced Labour Convention, 1930 (No. 29) [the draft of this convention was the inspiration for sec. 307, 71 Cong. Rec. 4488 (1929)], and I.L.O. Convention Concerning the Abolition of Forced Labour, art. 1, 1957 (No. 105).

Legislation, regulations, and practice in South Africa regarding working and living conditions of Africans are so antithetical to any notion of voluntariness, and the penalties inflicted for nonperformance of labor so widely applied, that the totality of the legislative system in South Africa amounts to forced labor on a massive scale for all Africans.

Specifically, the applicable laws and regulations engender forced labor for Africans by establishing a system of racial discrimination which (a) compels labor, (b) restricts and regulates admission to employment and access to vocational training, and (c) denies freedom of association and the right to organize.

I will go into each one of these.

(a) Compulsion to labor. The vigorous enforcement of repressive legislation by the nationalist government is tantamount to creating and maintaining a permanent pool of quasi-slave labor.

One of the cornerstones of the system is the Bantu Laws Amendment Act, No. 42, of 1964.¹⁹ Under this act and regulations made pursuant to it,²⁰ the entry of Africans into "prescribed areas"—that is language from the act—(covering the country's principal urban, mining, and industrial areas) and their stay in such areas is subject to strict control of labor bureaus designed to maintain in each area the number of Africans necessary to meet its labor requirements.

A national network of labor bureaus is responsible for application of influx control regulations, providing a recruiting and placement service for Africans, and supervising the enforcement of "vagrancy" laws. All Africans over 16 years of age must have a reference (pass) book, which they must produce on demand, and which serves, inter alia, as an employment record.²¹

All unemployed male Africans over 15 years must report to a labor bureau.²² The powers vested in the labor bureaus provide them with extensive means for the direction of African labor.²³

(b) Admission to Employment and Access to Vocational Training: Legislation currently in effect expressly imposes a color bar for access to certain classes of employment, in particular skilled labor.²⁴ In certain industries, prohibitions on restrictions on the performance of skilled work by Africans have long been in effect.²⁵

The South African Assembly recently has given the Minister of Bantu Administration complete discretion to prohibit Africans from

¹⁹ See Tariff Act of 1930, sec. 307, supra, note 1. See also, Proclamation No. 339 of 1964.

²⁰ Bantu Labour Regulation (Bantu areas) of 1968. A key provision is regulation 21(1), which provides that no African shall leave for employment outside a tribal (Bantu) area unless he has been registered with the tribal labour bureau and his contract of employment has been attested in accordance with regulations. There are many limitations on such contracting.

²¹ Natives (Abolition of Passes and Coordination of Documents) Act of 1952, as amended.

²² Bantu Labour Regulations (Bantu areas) of 1968, regulation 6(1).

²³ Bantu Labour Regulations issued under the Bantu Labour Act of 1964, secs. 21 and 22; and the Bantu Laws Amendment Act of 1970. In the prescribed areas the permission of the labor bureau must be obtained for a Bantu to take up employment. Act No. 42 of 1964, sec. 48. In addition, except in certain areas reserved for Bantu, the labor bureau may in specified circumstances refuse to sanction the employment or continued employment of any Bantu or even cancel an existing contract of employment. Bantu Labour Act, sec. 22(6)(h). A Bantu wishing to work as a casual labourer or on his own account may do so only with the permission of the labour bureau, subject to prescribed conditions. *Id.*, sec. 22(6)(c). A Bantu who is refused permission in a prescribed area to take up or be in employment, or whose contract is cancelled, may be referred to an "aid centre" or to the appropriate district labour bureau, or may be required to leave the area notwithstanding the fact that he may have lived there since birth. *Id.*, sec. 22(8).

²⁴ In particular, the Bantu Labour Act of 1964, as amended, and regulations issued thereunder, and Bantu (Abolition of Passes and Coordination of Documents) Act of 1952.

²⁵ Mines and Works Act of 1911, as amended by act No. 25 of 1926 and act No. 27 of 1956.

doing specified types of work.²⁶ The avowed purpose of this measure has been to protect white workers from the competition of workers of other races, particularly in skilled work.²⁷

In addition to the above-mentioned statutory obstacles for Africans to better paid jobs, discrimination between persons of different races is established or permitted by the legislation in the application of collective agreements and of the other wage-fixing machinery.²⁸

(c) Freedom of Association and the Right to Organize: The key legislation in this area—the Industrial Conciliation Act of 1956²⁹ and the Bantu Labor (Settlement of Disputes) Act of 1953³⁰—grossly prejudices the rights of African citizens. Africans are prohibited from membership in a registered trade union and are therefore totally excluded from participation in the general system of industrial relations provided for in the Industrial Conciliation Act of 1956.

In addition, any organization which African workers might form is precluded from being registered under the act, and both of the major trade union federations have excluded African organizations from their membership.³¹

By contrast with other employees, the conditions of work of the African workers are prescribed either by direct regulations or by the application to them of collective agreements in which they took no part. African workers' organizations have no legal right to take part in collective bargaining, in the settlement of disputes, or to represent their members in any official capacity. There is no protection whatsoever for their right to organize.

Any strike by African workers in any circumstances, even in situations where it would be perfectly lawful for "white" or "coloured" workers, is a statutory crime punishable by up to 3 years' imprisonment or a fine not exceeding 500 pounds, or both.³²

Thus, it can be readily argued that the socioeconomic structure in South Africa imposes on Africans³³ a brutal coercion to labor, enforced by punishment for noncompliance with the multitude of discriminatory laws and regulations, which clearly falls within the express definition of forced labor in section 307.³⁴

No Customs Bureau investigation is necessary in order to conclude that the legislation on the books in South Africa establishes prima facie that the use of forced labor pervades all economic strata of that country. Thus, any goods in the production of which Africans are employed must be prohibited from importation into the United States under section 307.

²⁶ Bantu Laws Amendments Act of 1970 provides in clause 11 that the Minister may, after giving a month's prior notice in the *Gazette*, prohibit Africans from employment in (a) a specified area, (b) a specified class of employment, (c) a specified trade, or (d) in the service of a specified employer or class of employers. Sec. 77 of the Industrial Conciliation Act of 1956 allows the Minister of Labour to establish job reservations of all kinds strictly on the basis of race. Twenty-six have been made to date. See *Government Gazette*, vol. 62, No. 2786, Aug. 28, 1970, p. 13.

²⁷ *Assembly*, June 7, 1955: *Hansard*, No. 18, col. 7156.

²⁸ Secs. 1(1)(xi), 48(3), 49(12), and 51(12) of the Industrial Conciliation Act of 1956.

²⁹ Act No. 28 of 1956, amended by act No. 41 of 1959.

³⁰ Act No. 48 of 1953, amended by act No. 59 of 1955.

³¹ See, *Infringements of Trade Union Rights in Southern Africa*, supra, note 8.

³² Native Labor (Settlement of Disputes) Act of 1953, sec. 18, as amended in 1955.

³³ "Coloured" persons have not been included here only for lack of space—the application of forced labor to them is equally strong. See, inter alia, the Coloured Cadets Training Act of 1967 and the Industrial Conciliation Act of 1956, as amended.

³⁴ See, *Infringements of Trade Union Rights*, supra, note 8, at 36–37.

THE EXEMPTION CLAUSE

Section 307 provides for the exemption from the prohibition of importation of "goods . . . which are not mined, produced, or manufactured in such quantities in the United States as to meet the consumptive demands of the United States."³⁵

This provision must be narrowly construed in order to give full effect to the primary purpose of the statute and follow the express congressional intent. This narrow construction is mandated also by the international treaty obligations of the United States.

Legislative history clearly reveals Congress humanitarian motivation. Senator Blaine, the provision's sponsor, made this intent unequivocal in the debates on the amendment.

Mr. Chairman, with your permission, I think these are particularly important, and I would like to read them in full from the Congressional Record.

Mr. BLAINE. By this amendment I propose to carry out the conscience of the world as expressed in treaties. I propose this amendment to reflect the spirit of the men and women who have sacrificed in order that slavery might be banished from the world.

The form of labor inhibited by this proposed amendment is slavery, nothing short of slavery. Are we at this moment to retrace our steps? Are we going to deny that which we have professed in the past? If so, we would better charge the Lincoln Monument with dynamite, tear down the noblest institutions in our country, and destroy the spirit of freedom.

If there is any opposition, it seems to me the opposition can come only from technical objections. I can see no reasonable, fundamental objection to this amendment.

I understand that we might suffer some economic loss, but we cannot afford any economic gain at the sacrifice of the degeneracy and death of the natives amounting to millions of men and women, who should be under the guidance of a civilization that will give them an opportunity to attain the heights they may attain the advancement of human progress.³⁶

Senator Blaine added to this—and again I quote from the Congressional Record:

I propose the amendment to the end that America shall not give aid or comfort to those employers and planters in foreign countries whose forced and indentured labor is bought through the poverty and degeneration with the attendant inhuman treatment of the native workers, who once were a happy people under their own order of things, but who are being drawn into the maelstrom of industrialism, which means their destruction as a people.

Such situations of poverty and degeneracy involve a moral question. But, aside from that, American agriculture and the American worker, from the standpoint of our economic security, should not be placed in competition with forced and indentured labor, wherever it may be found.³⁷

Important international legal obligations also militate in favor of the narrow construction outlined above. The United Nations Charter, articles 55 and 56 spell out the affirmative duty of all signatory nations with regard to achieving minimum human rights for all peoples of the

³⁵ This clause was added by the Conference Committee during their final negotiations on the act. Conference committee report, H.R. 2667, 71st Cong., 2d sess. (1929-30), at 29.

³⁶ 71 Congressional Record 4496 (1929).

³⁷ *Id.*

world,³⁸ and the Universal Declaration of Human Rights more fully articulates these rights.³⁹

Since the United States is both a signatory to the United Nations Charter and voted for the Universal Declaration, it would appear that it has a binding obligation to "take joint and separate action in cooperation with the Organization for the achievement of the purposes set forth in article 55.⁴⁰ (The quote is from article 56 of the Charter.)

This country's membership in the International Labor Organization imposes an obligation to promote its objectives as articulated in the Declaration of Philadelphia, and again I would like to quote from that document:

a. All human beings, irrespective of race, creed, or sex, have the right to pursue both their material well-being and their spiritual development in conditions of freedom and dignity, of economic security, and equal opportunity.

b. The attainment of the conditions in which this shall be possible must constitute the central aim of national and international policy.⁴¹

The ILO itself has consistently found that South Africa is violating these principles.⁴²

It is irrefutable that South Africa has consistently and flagrantly violated almost all essential human rights found in the U.N. Charter, the Universal Declaration of Human Rights, and the Declaration of Philadelphia.

This has been well documented by the International Labor Office, and is further evidenced by the plethora of resolutions both in the United Nations Security Council and General Assembly regarding the violations of human rights in South Africa, many of which have been voted for by the United States.⁴³

Thus, in light of the humanitarian intent of Congress and international imperatives, the United States at the very least should not aid the South Africans in flaunting their disregard of international law and human dignity by improperly expanding the scope of the exemption clause.

Exemptions from the application of the act should be allowed only where it can be conclusively shown that American enterprises are in-

³⁸ Article 55. With a view to the creation of conditions of stability and well-being which are necessary for peaceful and friendly relations among nations based on respect for the principles of equal rights and self-determination of peoples, the United Nations shall promote:

a. higher standards of living, full employment, and conditions of economic and social progress and development;

b. solutions of international economic, social, health, and related problems, and international cultural and educational cooperation;

c. universal respect for, and observance of, human rights and fundamental freedoms for all without distinction as to race, sex, language, or religion.

Article 56. All Members pledge themselves to take joint and separate action in cooperation with the Organization for the achievement of the purposes set forth in Article 55. See J. Carey, *UN Protection of Civil and Political Rights* 12 (1970) and V. Van Dyke, *Human Rights, the United States, and World Community*, 105-20 (1970).

³⁹ A/Rec/217A(III) (1948).

⁴⁰ U.N. Charter, article 56.

⁴¹ The Declaration of Philadelphia, International Labor Organization, 26th Session, May 10, 1944.

⁴² See Seventh Special Report of the Director-General on the Application of the Declaration concerning the Policy of "Apartheid" of the Republic of South Africa, International Labour Conference, 56th session, Geneva, 1971.

⁴³ S/AC.14/L.3 Expert Comm. Established in Pursuance of Security Council resolution S/5773; S/AC.14/6, March 1965; A/RES/2054/xx Rev. 1, Feb. 17, 1966; A/RES/2202(xxi), Dec. 20, 1966; A/RES/2144(xxi), Oct. 28, 1966; A/RES/2307(xxii), Dec. 15, 1967; A/RES/2396(xxiii), Dec. 5, 1968; A/RES/2439(xxiii), Jan. 9, 1969; A/RES/2446(xxiii), Jan. 13, 1969; A/RES/2506(xxiv), Nov. 28, 1969; A/RES/2547(xxiv), Jan. 15, 1970; A/RES/2624(xxv), Oct. 19, 1970; A/RES/2627(xxv), Nov. 2, 1970; A/RES/2714(xxv), Jan. 19, 1971; A/RES/2671(xxv), Jan. 5, 1971; A/RES/2764(xxvi), Nov. 16, 1971; A/8515/Rev. 1, Nov. 15, 1971.

capable of meeting U.S. consumptive demands within a reasonable time and that no alternative foreign source which would not violate the status can be found.

CONCLUSION

The image of the U.S. Government would be enhanced both at home and abroad by the application of section 307 to South African imports.

The affirmation of this domestic legal imperative might begin to dispel the belief in some segments of our population and in the international community that the United States is a lawless, opportunistic, and racist nation whose policymakers are too willing to sacrifice humanitarian concerns for the fast buck whenever the two conflict.

The confidence of the black African and other third world countries in U.S. leadership might be rebuilt so that their courtship with the Socialist bloc could be challenged. Undoubtedly, this would have favorable long-term diplomatic and trade consequences in black Africa and elsewhere.

The application of section 307 might also put a great deal of pressure on other major trading partners of South Africa, subjecting them to much more severe domestic and international scrutiny. Eventually they might also consider curtailing their involvement in the maintenance of that abhorrent system.

The principal policy that calls for heeding the legal imperatives for the application of section 307 in this case, however, is the need to stop U.S. complicity in the vicious scheme of apartheid which savagely maintains 80 percent of the people in South Africa in human bondage.

Our country was founded on principles which are antithetical to those of the racist South African regime. Our continued importation of products from that country flies in the face of applicable law and everything we as a people profess to hold dear.

Our Constitution and all our accomplishments as a nation are demeaned by our illegal profiteering at the expense of nonwhite South Africans. For this country to refuse to enforce section 307 in the face of its manifest applicability would be tantamount to declaring to ourselves and the international community our moral bankruptcy as a nation.

Mr. Diggs. Thank you, gentlemen, and we thank the panel for a most interesting, diversified presentation.

I recognize the gentleman from Michigan, Mr. Vander Jagt.

Mr. VANDER JAGT. Thank you very much, Mr. Chairman.

Mr. Irwin, you testified in reference to the ILO Convention on the Abolition of Forced Labor, that the Executive recommended to the U.S. Senate in 1959 "ratification is not deemed appropriate for this convention." You said this was the coordinated view of the interested agencies and departments of the executive branch.

Could you tell us which agencies and departments were involved in that coordinated view?

Mr. IRWIN. I can't be certain of all of the departments, but it goes through the normal executive branch clearances, which certainly include Labor, State, Commerce, at that time Bureau of the Budget. It was a very large review committee.

Mr. VANDER JAGT. Then you further testified that in 1963 that recommendation to the Senate was changed. Who initiated the re-evaluation of the recommendation concerning this convention?

Mr. IRWIN. I am not absolutely certain. My impression is that it was Secretary of Labor Goldberg who first started the review progress. It was completed under Secretary Wirtz.

Mr. VANDER JAGT. So that within the executive branch it was the Department of Labor that initiated the change, as far as you know?

Mr. IRWIN. As far as I know, sir.

Mr. VANDER JAGT. That leads to what I am really interested in. Can you define for us the exact division between Labor Department powers and responsibilities and State Department's powers and responsibilities vis-a-vis formulation of policy, in this case economic policy, as it relates to South Africa?

Mr. IRWIN. That is not an easy question to respond to quickly. The Labor Department's interest comes about because the Secretary or his representative is delegated as Chairman of the U.S. Government Delegation to the ILO. As such, he is responsible for ILO actions.

On political questions that have sometimes been raised in the ILO and on political matters, he relies on a colleague who sits with him in the delegation from the State Department, and it is State's responsibility in essence to develop policy concerning political questions.

However, these positions are transmitted through the Secretary of Labor or his representative, either to the ILO conference and conventions or to the Congress of the United States.

Mr. VANDER JAGT. To break it down to a specific instance, what could the Department of Labor do to encourage U.S. firms doing business in South Africa to engage in the kinds of fair employment practices we know here at home? Can the Department of Labor encourage U.S. firms to do that, or are you under a constraint of the State Department? What is your relationship on a matter such as this?

Mr. IRWIN. The problem, I think, comes about because we have really almost no contact with U.S. firms directly on these matters.

Mr. VANDER JAGT. And yet it was the Department of Labor, at least as you recall it, that initiated a kind of a major change in policy within the executive branch pertaining to the Abolition of Forced Labor Convention and its ratification by the Senate. It would appear that there are some initiatives that the Department of Labor can take.

Mr. IRWIN. Well, in terms of ILO activity, I think you will find that the U.S. Department of Labor representative has always taken the initiative on matters of that sort, as was the case in this, but with reference to encouraging or trying to change policies of American business, we really as a department have almost no contact directly with business firms.

Mr. VANDER JAGT. We have heard from the other members of the panel considerable discussion of 19 U.S.C. 1307 of the restriction on the importation of goods manufactured by forced labor or indentured labor or convict labor, and then of an exemption clause in the same statute.

Can you tell this committee what goods are coming into the United States today via this exemption clause in 19 U.S.C. 1307?

Mr. IRWIN. I cannot answer that question directly, and I respectfully suggest that you ask the representative of the Secretary of the Treasury, who has responsibility for enforcing that provision.

Mr. VANDER JAGT. That leads me, Mr. Irwin, to Mr. Gervasi and Mr. Wachholz. I thank both of you for bringing this statute to my attention; I was not aware of it. I am extremely intrigued with it. I am also troubled by it. It seems to me it puts a restriction on importing goods that are manufactured by forced labor and then goes on to say "except you can import any goods into the United States that the United States imports."

It says:

But in no case shall such restrictions be applicable to goods and so forth which are not produced in such quantities in the United States as to meet the consumptive demands of the United States.

It seems to me we are saying if we have a need to import something, then the provisions of this section should not apply.

How do you read that exemption?

Mr. WACHHOLZ. Would you like me to answer?

Mr. VANDER JAGT. Yes, sir.

Mr. WACHHOLZ. As I tried to point out in the paper, I think that it has to be narrowly construed. Again, I am just repeating what I have said, but we have got obligations under the United Nations Charter and through the International Labor Organization.

Since we have this statute on the books and the primary purpose of Congress in enacting it, as I found through reading everything that is in the Congressional Record on this section, was to prohibit our importing these kinds of goods because of humanitarian concerns. In light of this, to give the exception clause a wide reading would be saying that you are just wiping section 307 off the books. And I don't think Congress when it enacted the section in 1929 intended that reading. If the exception clause were to completely nullify the statute, they probably would just as soon have left the whole thing out.

The other reason is that I think, in light of these international obligations and in light of the congressional intent—as found in one of the best cases of congressional intent that you can find—that statement by Senator Blaine—and also in light of the fact that we can get goods from other places, if there are those goods that—

Mr. VANDER JAGT. But the statute does not say that, "if we can get it from somewhere else."

Mr. WACHHOLZ. Well, you have to read in a lot into statutes. Unfortunately, statutes, I guess, never quite satisfy the demands of time, and this is 40 years later.

I think in light of this intent of Congress and also the various obligations we have taken on since then, that I can read it that way and be clearly within the original intent.

Mr. VANDER JAGT. I would be all for not narrowly construing this. I am construing it as broadly as possible. My question is whether it ought to be narrowly construed or widely construed, or rewritten; I wonder how narrowly you can construe or how widely you can construe what at least to me on the face of it is crystal-clear language.

It says if we don't produce the goods in sufficient quantities to satisfy our local consumption, then we can import them despite the

rest of the statute. There is nothing conspicuously ambiguous in that.

Mr. WACHHOLZ. I don't know what "consumptive demands" mean, though.

Mr. VANDER JAGT. It is what we use, what we consume.

Mr. WACHHOLZ. Again, there are many ways to construe that also, I imagine. To satisfy our consumptive demands—does that mean if imports were cut off, that domestic producers, if given time, could get into this particular area and satisfy them? Or does it mean a product that we don't have at all in this country and are not capable of producing? Does it mean that we could not go and get it somewhere else to satisfy our consumptive demands?

There are all sorts of possibilities. I think you have to take the thing in the context of 1971, in the context of our obligations and in the context of the legislative intent, the primary purpose of that statute—and there is nothing in the legislative history to the contrary.

I think that clause was probably put in there just as a contingency to make sure that there was not something we absolutely could not get that we needed from a particular country. I say that as just speculation.

Mr. VANDER JAGT. If we were going to enforce this statute vigorously, you would feel far more comfortable if that exemption were not included in there, would you?

Mr. WACHHOLZ. I don't think so. I think the exemption probably has a purpose, and sometime we may find an occasion to use it where we have some good that we absolutely have to have. But in this situation if you can find something somewhere else, I think it would be a shame, and illegal, to keep buying it from South Africa when so doing helps to perpetuate their system.

I don't think any testimony needs to be given on that system, there is no disagreement on it anywhere.

Mr. VANDER JAGT. Mr. Gervasi, it is probably not fair to ask a professor at Oxford to comment on U.S. law. Are you a lawyer in England?

Mr. GERVASI. No, I am not.

Mr. VANDER JAGT. Then it would be totally unfair.

Mr. GERVASI. I am an economist.

Mr. VANDER JAGT. Mr. Irwin, do you have any expertise on such language?

Mr. IRWIN. I join my colleague in pleading to be an economist, not a lawyer.

Mr. VANDER JAGT. I have just one other point, Mr. Chairman, that I would like to go into.

It seems to me that what you are suggesting Mr. Wachholz and Mr. Gervasi, is largely what to me is a new concept—just that it is new does not mean that it is not valid—of forced labor. I had always thought of forced labor as putting a gun to someone's head and saying, "Either you do that job or I will shoot you," or "Either you do that job or I will put you in prison."

Please correct these impressions if they are wrong. Your concept of forced labor would apply not to a specific job or a specific task that a man is being ordered to do, but to work by a whole class of people. The consequences of saying it is "forced," if the alternatives are not viable, are not attractive.

Are you saying that the choice of not doing anything for example, gives you the choice of starving to death, and is therefore forced labor?

Have I grasped what you are telling us?

Mr. GERVASI. Yes, I think that is the point. In fact, if we follow through with your analogy of a man holding a shotgun in an open pit mine and they don't function as they are supposed to, and one of them gets shot; well, the ultimate consequences are roughly the same in that case and in the consequence in the case of South Africa.

If the millions of Africans who presently reside in the so-called prescribed areas had to live in the Bantustans, the mortality rate would rise well above what it already is. I mean the land simply cannot support them. And that really is, if one digs into the development of apartheid legislation and looks carefully at the statements which are made by people in the House of Assembly, one can see very clearly their understanding that they are creating a situation which has a compulsion almost as strong, if not in many senses stronger, than the man standing by you with a shotgun, because, of course, when you are standing by in a gang with a man holding a shotgun over you, that is one thing; when your family, your wife and children, are threatened with starvation because you have been endorsed out—which is now, of course, what is happening to many Africans living in the white areas—to scratch a living out of soil which just won't yield, in a way I don't even think this is a philosophical question, in a way that sounds to me more horrible.

Mr. VANDER JAGT. I have absolutely no problem with the portion of the statute that talks about convict labor. But when you get to forced labor, I have a difficult time philosophically grasping how you would define "forced labor."

I don't think you would push it this far, but in northern Michigan I have a ranch, and I have a man working on it who is about 62. He hates northern Michigan; he hates the cold; he can't stand it. His whole family is in Miami and he wants to work there but so far we have not been able to help him find a job in Miami. Now he works for me; he does not want to, but he really has no other alternative.

Until such time as we can locate a job for him in Miami with his family, is he a forced laborer for me?

Mr. GERVASI. No, not at all. You have already defined the difference.

Mr. VANDER JAGT. But the alternative there is "no income."

Mr. GERVASI. But there is no legislative, no statutory prohibition on his finding any alternatives or on his demanding a reasonable wage from you. There is no statutory prohibition of any kind.

Perhaps if the economy were not in the situation that it is, it would not be quite such a difficult job.

Mr. VANDER JAGT. Here again, the statute defines "forced labor" for us, and it says:

"Forced labor" herein used shall mean all work or service which is exacted from any person under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily.

Mr. GERVASI. That seems a rather broad concept.

Mr. VANDER JAGT. It would fit very much, I think, into what you have been telling us.

Mr. GERVASI. I think what is happening in South Africa has to be construed much more narrowly and harshly than that. That seems to be rather a broad definition of forced labor.

It seems to me one might want to say about that statement that you quoted, that it is kind of open ended and a bit broad—I don't know. I can't really comment with any expertise on that, but when it comes to South Africa and when it comes to an analysis of the legislation which exists there, I don't think anybody can have any doubts.

Mr. VANDER JAGT. This would be helpful to me. Do any of the three of you know of any court or any international court that has ever ruled that a class of people, because of no viable alternatives, are in effect accepting "forced labor"?

Do you know of any such cases?

Mr. IRWIN. I don't.

Mr. GERVASI. No.

Mr. VANDER JAGT. Do you know of any?

Mr. WACHHOLZ. This is again the legal significance of various United Nations and United Nations agencies' resolutions. It has not been finally determined, and is a subject much debated in international law circles. But, if they are to be given any weight at all, the evidence is overwhelming that this has been determined conclusively to be forced labor.

In fact, I could read from, I think, the Department of Labor's submissions here. I think they submitted one piece entitled "Declaration Concerning the Policy of Apartheid in South Africa." If I am not mistaken, in that the ILO declares that the whole system in South Africa is tantamount to forced labor, is in fact forced labor. The U.N. has so many documents to that effect that it would be just a waste of time in talking about it.

Mr. VANDER JAGT. Perhaps you could tell me this. As I see it, our statute is three pronged: forced labor, penal sanctions, and indentured labor.

Under the labor contracts in South Africa, are there penal sanctions for nonperformance of the job?

Mr. GERVASI. For certain parts, yes. It is a criminal offense.

Mr. VANDER JAGT. I understand they can slap them in prison for a lot of things under the contract.

Mr. GERVASI. Yes.

Mr. VANDER JAGT. Is there a penal sanction for nonperformance of the task?

Mr. GERVASI. For breach of contract, yes.

Mr. VANDER JAGT. Yes?

Mr. GERVASI. Yes.

Mr. VANDER JAGT. Mr. Irwin, you have a relationship with the ILO, that is correct?

Mr. IRWIN. Yes.

Mr. VANDER JAGT. Can you shed any light for me on how the ILO defines the concept of forced labor?

Mr. IRWIN. We have submitted the ILO statement that my colleague, Mr. Wachholz, just quoted that pertains to South Africa.

Mr. VANDER JAGT. Yes.

Mr. IRWIN. I hesitate to generalize for the ILO, because the organization has failed to look into the problem of forced labor in any

of the countries behind the Iron Curtain. For many years they have been requested to do so, but the item fails to get high enough on the agendas for consideration.

Mr. VANDER JAGT. Thank you very much.

And thank you, Mr. Chairman.

Mr. DIGGS. I remember when Congressman Vander Jagt and I were considering the trip to South Africa at a given time and word came back that the government didn't find it convenient for us to visit at that time, and of course we responded that the reasons given for not being convenient didn't strike us as being very substantial.

So I am curious, as I know Congressman Vander Jagt is curious, about the scenario between the U.S. Embassy in Pretoria and your Department about having somebody from the Bureau of Labor Statistics, Mrs. Kidney come down, that it was not convenient at that time for her to travel to Pretoria.

Having seen some of the activities of our mission there, at least I am not aware that they were so overwhelmed that one Mrs. Kidney would have made that much difference.

Mr. IRWIN. Well, Congressman, it is going to be helpful that they give her assistance when she is there and open certain doors, make certain appointments, make certain people available for her.

I was not in the Department of Labor when Mrs. Kidney's first trip was projected. She was attending a labor attaché conference sponsored by the Department of Labor and the Department of State and was in Rabat, Morocco. At the conclusion of that conference she had hoped to go on to South Africa. While in Rabat she was informed that it was not convenient for her to go South at that point in time and she did not do so.

The Embassy clearly set up another date and the arrangements have been completed for her trip. She will be going either mid or late February, for several weeks.

Mr. DIGGS. Have you made any other investigatory trips of this type?

Mr. IRWIN. Myself?

Mr. DIGGS. Or the Department?

Mr. IRWIN. The Department, yes.

Mr. DIGGS. In African countries?

Mr. IRWIN. Yes. Mrs. James, who has done a good deal, practically all the statistical work we have submitted to you, is currently in Africa, in Morocco, Liberia, and Ghana. Mr. Steen on my staff has visited a number of African countries. He personally has preferred not to visit South Africa.

Mr. DIGGS. Now, you mentioned that you didn't have any information on Mozambique. Is it not possible to obtain that information?

Mr. IRWIN. We have not been able to locate any from secondary sources here in Washington. We are hopeful that when Mrs. Kidney is on the scene she will locate sources that we have not heard about.

Mr. DIGGS. Are you suggesting that the Portuguese and the South African authorities have not been cooperative in obtaining this information?

Mr. IRWIN. Not at all, sir, but we do understand that much of the kind of information we are looking for simply is not tabulated and is not available. We are certain however, that if we get somebody on the

scene who can give examples of the kinds of things that we are looking for, we would have a greater chance of finding pertinent material.

Mr. DIGGS. Do we have a labor attaché anywhere in Africa?

Mr. IRWIN. Yes, sir.

Mr. DIGGS. Where?

Mr. IRWIN. In Johannesburg.

Mr. DIGGS. I thought I remembered that. Now, we have a labor attaché in Johannesburg. Why would we have any trouble getting information from the Portuguese territories which are contiguous to it? What is he doing, what is his function?

Mr. IRWIN. Thank you for asking that question.

The labor attaché plays, I think, a rather unique role in the State Department. He is primarily a political officer, he is not an economist, he is not a statistician. In addition to his responsibilities for keeping abreast of the trade unions in the country in which he is located, he has many other responsibilities, including observing political events in the country. He is not trained to collect statistics. He is not trained to represent the Department of Labor.

He may know very little, in fact, about the functions of the Department of Labor, although he carries the title of labor attaché.

Now we have been working for some time, through some training programs and other activities, to develop more expertise on labor matters with our labor attachés, but their prime responsibility is to keep abreast of the labor movement in the country in which they are located.

Therefore, our requests for statistical data sometimes are not able to be understood. Sometimes they are not answered. In this particular case, in South Africa, I think Mr. McHale has done the best he possibly could for us.

Mr. DIGGS. You get inquiries from firms about labor law, labor practices, wage rates, do you not?

Mr. IRWIN. Yes, sir.

Mr. DIGGS. Well, suppose your old company, Deere & Co., would ask you about something related to these subjects. Who would provide it and how comprehensive a reply would you provide?

Mr. IRWIN. Where the Department has that information available here in Washington, for example, it comes from Mrs. Kidney's division of foreign labor conditions, and their files are very extensive. They have produced a number of booklets on labor law and practice in various countries. This one on Botswana was done in 1968; it is now out of print and I am sorry we don't have many copies available.

They have not done one on South Africa itself. They have done some on other countries in Africa.

Mr. DIGGS. Why not South Africa?

Mr. IRWIN. In part because they didn't feel there was the interest and they have not had the resources to do it.

Some of the material that normally would go in this is the kind of material we are hoping that Mrs. Kidney will be able to collect on her forthcoming trip.

Mr. DIGGS. Now, suppose they ask you specifically about the wage scales or what is the Department's opinion about closing the gap and the differentials in the wage scales that are based on race, what would be the Department's recommendation?

Mr. IRWIN. We could recommend, certainly, that they take what steps they can to improve the working conditions for the employees, such as equal pay for equal work and many of the other principles we would support.

We have not been asked these questions by firms generally. The few times they have asked for specific rates—and I am told by the staff that it has been very rare—we sometimes have been able to locate material for them but often we have not.

Mr. DIGGS. Do you recommend wage scales for businesses?

Mr. IRWIN. No, sir.

Mr. DIGGS. Now, before assuming your present position, you were an official with Deere & Co. responsible for foreign labor relations. What kind of contact did that put you into with respect to your Deere operations in South Africa?

Mr. IRWIN. Frankly, not at all. We were not having labor-management problems in South Africa and I had no contact. I was concerned primarily with Europe, South America, and to some extent with Australia.

Mr. DIGGS. In table 2 of your information on labor in the Republic you refer to "economically active population" as defined by the South Africa Government. What does that mean?

Mr. IRWIN. This means people that work, and those percentage figures mean the percentage of the racial group who work. That is why they don't add up to 100 percent if you are running down the table.

Mr. DIGGS. Do you have a racial breakdown of these groups, that is, the skilled, the semiskilled, and the unskilled in the South African labor force?

Mr. IRWIN. No, sir; not to my knowledge.

Mr. DIGGS. You state that there are no labor laws specifically addressed to, of course, U.S. firms in South Africa, but what about laws applicable to foreign firms? Our question should still elicit a response based within that context.

Mr. IRWIN. To the best of my knowledge sir, the laws are not applicable directly for foreign firms; they are applicable to all firms engaged in business in South Africa.

I may have to correct the record here, but to our knowledge no laws that we have examined are specifically designed for foreign firms. Mrs. Butcher is an attorney and maybe she knows better than I.

Mr. DIGGS. She will have a chance. Do you monitor labor practices by U.S. firms in South Africa?

Mr. IRWIN. No, we do not, sir.

Mr. DIGGS. Or in any part of Africa?

Mr. IRWIN. In no part of the world.

Mr. DIGGS. In no part of the world. You don't monitor wages, check on discriminatory practices or anything of that nature?

Mr. IRWIN. No, sir. I am told that there have been a few investigations recently in the civil rights field concerning only U.S. citizens who are employed overseas, but not employment of foreign nationals.

Mr. DIGGS. To your knowledge, there have been no complaints under the forced labor concept application. Is there any record in the Department of anyone having even complained under the provisions of this law?

Mr. IRWIN. With the exception of the example that I gave in my testimony; that is the first one that appeared in our file, the example in 1965.

Mr. DIGGS. In 1965?

Mr. IRWIN. Yes.

Mr. DIGGS. You have not had any before or none since?

Mr. IRWIN. No, sir.

Mr. DIGGS. Mr. Wachholz, how do you account for the fact that there have not been some complaints made under the provisions of the act?

Why isn't there some case law on this thing?

Mr. WACHHOLZ. There is, Mr. Chairman.

Mr. DIGGS. There is an opinion requested of the Labor Department and of Justice about the interpretation as you have conceived it.

Mr. WACHHOLZ. Well, there was one application of section 307 that occurred in 1953, in connection with the use of convict labor and there the Customs Bureau determined that prisoners were being used to produce furniture in Victoria, Mexico. That is reported in the Treasury Decisions cited at footnote 6 in my paper.

They expanded that decision in 1958 to include clothes hampers and palm leaf bags. I think there is certain precedential value involved in how they applied the statute there, but I am not sure how far you want to take it. I tried to inquire about other complaints under the statute and I could not find any other actual application.

I spoke with a Mr. Paul McCarthy who was Assistant Director, Restricted Merchandise Division, Entry Procedures and Penalties, of the Bureau of Customs. I talked with him on April 19, 1971, to inquire more about this and he told me vaguely about the deciduous fruit inquiry and the fact that it had been handled "diplomatically."

Somehow the Government made arrangements that whereas South Africa would not stop the convict labor being used in processing fruit, they would make sure none of that particular fruit was shipped to the United States, and what fruit we imported from South Africa would be certified to the effect that no convict labor was used in its processing.

I asked him if I could see that file, but he informed me that it was classified. I asked him if there were other complaints under this section, and he said that there were a good number of them. He pointed to his file cabinet top drawer and said I could not see them because they were classified.

I don't know exactly what all there is. I think it would be worth checking under the Freedom of Information Act to see if these complaints might be made available, because I think they have a lot of relevance—needless to say!

Mr. DIGGS. The committee will take due notice of that and follow up.

Mr. Secretary, what about the cheap labor in South Africa undercutting U.S. labor? Do you have any comments to make on that? We have got some examples which would indicate that there is a carrousel here that might affect the U.S. balance of payments, exports, and be quite relevant to your Department and U.S. interests.

Mr. IRWIN. We have not had a chance to analyze some of the wage data I have given you. I have no information myself of the practices of particular firms, payments that are made by particular firms. I am certain that if examples were called to our attention of goods that were

imported into this country under substandard labor conditions that we would be glad to investigate those complaints and take appropriate action.

Mr. DIGGS. I am looking at one here, an article at least which refers to the firm in South Africa exporting high speed drill twists that bears a relation to this particular matter and perhaps we ought to share this with you.

It is from the economic—I can't see the top of this article here.

Counsel, would you show that to the gentleman?

Well, this whole question of what extent South African labor undercuts U.S. export markets is something that this subcommittee is quite interested in and we want to know whether or not any of these companies are shifting their production for South Africa and other parts of Africa to U.S. companies, that is, to South Africa employing these black workers at lower wages and what effect this has potentially on U.S. workers.

Mr. IRWIN. It is my understanding, sir, that very, very little in the way of manufactured goods is imported to this country from South Africa. Most of the American firms, more than 300 of them, are producing and working for the largely African market.

We do import minerals and basic products from South Africa but as I understand it in terms of our finished manufactured goods it is almost negligible.

Mr. GERVASI. Mr. Chairman, I think that is a very important point that you have raised for this reason. The South African Government is now engaged in the promotion of a very substantial economic expansion into independent Africa and that policy which is known as outward policy touches directly upon the question which you raise in this way.

One of the principal aims of the outward policy is to divert the trade of Africa in the following way. The present situation roughly in Africa south of the Sahara, including, perhaps, some of West Africa, is that trading relations are mainly still with the old metropolitan countries plus the United States and say Japan—that is to say, France, West Germany, the United States, Great Britain, Japan.

From those areas these countries import almost all of their manufactured commodities, especially the more technically sophisticated areas. To those areas these countries export most of what they produce in their monocultures—agricultural exports, raw materials, minerals, semiprocessed things.

South Africa is engaged in diverting trade. The South Africans wish to take the place of the Western developed countries in that trade pattern, to reorient African trade so that South Africa may export to Africa manufactured commodities and import from the African periphery, if you like, the raw materials, and so forth, which are presently going overseas across the Atlantic Ocean or across to Europe. In both those cases, South Africa is attempting to replace Western countries. There is by the way very, very substantial room for this trade diversion because South Africa's share of the present African market is really very small and that market is very large and obviously growing.

So this means that there is a direct conflict between the interests of Western countries and of the United States and of the U.S. workers

on the one hand and South Africa's outward economic expansion on the other.

There seems to me to be a direct conflict. And it should be said of course that the principal advantage upon which the South Africans are counting in bringing to successful conclusion this foreign economic policy is the system of forced labor. Their great advantage is a cost advantage and they are now able to export sophisticated manufactured products—not capital goods but sophisticated secondary manufacturers.

Their great advantage is this enormous cost advantage. Of course, once one raises that question we confront as well the fact that the multinational corporations are almost unanimously attempting to use South Africa as a base in order to work within that policy and to take advantage precisely of the same system of forced labor for the same reasons.

In that sense, many of the multinational corporations are, themselves, in direct conflict with the interests of American workers because they are taking advantage of this cheap labor. That means diminishing the volume of jobs which becomes available in the United States for similar kinds of exportation.

Mr. DIGGS. What about industries in South Africa in which American firms are operating with a system of contract labor? Do you have any statistics on that, Mr. Secretary, of South Africa?

Mr. IRWIN. No; I don't, Mr. Congressman.

Mr. DIGGS. Could you get any statistics for us along those lines? ⁴⁴ For example, SWANLA, the governmental authority in Bolivia which controls labor for the mines, the Newmont Mining Co., all black labor is under control of the Government and, in that sense, it is contract labor and it would appear to me that there would not be much difficulty in getting that information for the benefit of the mission of the subcommittee.

Mr. IRWIN. You know, sir, that the Department relies on voluntary information in this country and we have difficulty sometimes in getting cooperation from all the employers we would like there.

Since we have no statutory authority to collect data, I will be glad to see what we can do but I am not optimistic.

Mr. DIGGS. What about trade unionism in South Africa in relation to the worker? What is the Department's feeling about that matter?

Mr. IRWIN. We certainly have encouraged the development of trade unions there. We have had representatives of a number of trade unions, both white and black, for training here in this country for varying periods of 2 to 6 weeks.

From September 21, 1971, to November 5, we had Mr. Norman Daniels, general secretary of the Textile Workers Industrial Union. From April 30 to June 13 we had Lucy B. Moubelo, general secretary of the National Union of Clothing Workers. From September 15, 1969 to October 30 we had Mr. Rampono, general secretary, Coloured Workers Automotive Union.

These were people who toured the United States or took particular advantage of certain training opportunities here in this country.

⁴⁴ As of this date, no reply has been received from the Department of Labor. It is hoped that the Department will supply the information requested which will then appear in pt. III of these hearings.

Mr. DIGGS. Are you aware of the resolution which was adopted by the U.N. Special Political Committee calling upon all national and international trade unions to intensify their action against apartheid?

Mr. IRWIN. I have not read that resolution recently. I have been aware of it.

Mr. DIGGS. What does the Department do to advance this effort since we were supporters of this resolution? ⁴⁶ It would appear that the Department would have some obligation in implementing such a resolution to which the United States was the signatory.

Mr. IRWIN. Mr. Congressman, I would have to look into that because that is not a matter that I have reviewed as to what actions have taken place.

Mr. DIGGS. What about the attitude of the Department on industries going into the Bantustans or the homelands in South Africa? Has the Department taken any position on this?

Mr. IRWIN. Mr. Congressman, we have not had occasion to do so. We have not been contacted by business firms. Business firms generally go to the Department of Commerce for their contacts for foreign trade or for business there. They have rarely come to us.

My staff tells me that if they had a half dozen inquiries in the last year or two it is unusual.

Mr. DIGGS. For example, on October 30 there was an article in the Johannesburg Star, "This is the first industrial area to be established in the whole homelands," and it indicated that the workers were receiving 60-percent less in wages, 16-percent increase in working hours, and considerably lower and slower wage increases than in the metropolitan areas.

Now, this is the first industrial area to be established in these homelands which would indicate that they are off on an even greater exploitation than is apparent in certain other parts of the country. Now, in view of the Department's involvement in U.S. interests in labor relations one would think that you would be aware of the implications of this.

Mr. IRWIN. Mr. Congressman, I am certain that if we were asked by firms if they should develop industry in those areas we would probably recommend against it. The figures that we have submitted to you show a very dismal picture in terms of wages and earnings of the major groups in South Africa.

Mr. DIGGS. Well, let's take one more example. Table 12 of your appendix gives the data for a family in Johannesburg. Is there any data available for white families for comparative purposes?

Mr. IRWIN. Not to our knowledge, sir. As you can see, we have very scanty knowledge as to the makeup of these budgets and they present a pretty wide spectrum. There is some detail there that gives you the reasons for it but this is very, very rough data. We are hopeful, again, that we will learn more as to the backup that goes into this kind of material but we don't have that information available here.

Mr. DIGGS. Also in this table 12 you have got three different minimum monthly budgets.

Mr. IRWIN. Yes, sir.

Mr. DIGGS. And there is a significant difference in the amount of rand per month that has been calculated by the Soweto Urban Council

⁴⁶ Ibid.

as a minimum for an African family, 117.72 rand and 69.86 rand per month computed by the Johannesburg non-European Affairs Department.

What documentation is available on the wages paid to African workers by our own firms and their relation to the poverty datum or bread-line as some people call them?

Mr. IRWIN. To my knowledge, sir, we have no data on payment by U.S. firms to their employees. We have submitted to you the figures that we have for the country as a whole with particular reference to certain industries.

Mr. DIGGS. Do you normally have information or have any involvement in wages that are paid U.S. employees or local employees in any of these countries?

Mr. IRWIN. No, sir, in any country of the world. That has not been a major mission that we have. There are times that we do survey articles for particular countries where occasionally that issue will come up but the record is pretty spotty. That has not been a major concern of the Department.

Mr. DIGGS. Has the Department any policy with respect to the employment of blacks by any of these agencies in South Africa? Are you parties to any of the employment practices by our own agencies in these countries?

Mr. IRWIN. No, sir. As I indicated earlier in response to one of your questions, if they recruit and employ American citizens, yes. Otherwise, most of our laws, rules, and regulations are not applicable to the practices of those firms in foreign countries.

Mr. DIGGS. Are you aware of any agreement, either public or private, that might exist between our Government and the South African Government about these practices?

Mr. IRWIN. No, sir; I am aware of no such agreement.

Mr. DIGGS. The other day an ad hoc hearing turned up some agreement in Iceland not to assign or to limit the assignment of black Americans to that country and I am just curious as to whether or not you might have lurking in your files somewhere an agreement about to eliminate, or limit blacks being employed in American agencies overseas.

Mr. IRWIN. No, sir; not to my knowledge nor have I ever heard of the existence of one.

Mr. DIGGS. Your table 10, which is statistics from the South African Department of Labor lists registered unemployment by race, sex, occupational group, geographic region. It gives statistics for white, Coloured, and Asians, but not for Africans. What are the implications of that?

Mr. IRWIN. The Government of South Africa makes no attempt to collect or publish figures for Bantus in this field.

Mr. DIGGS. You just have a lack of concern about the whole matter.

Mr. GERVASI, what comment would you care to make?

Mr. GERVASI. This is one of the big puzzles, of course, which we are all very much interested to try to untangle. It has to do as well with the definitions of labor force. Most of those who are working on questions of South African economic affairs believe that there are very substantial levels of unemployment. I think that the South African

Government must know about these and I am sure that they don't want to make them publicly available.

The reason I think that they must know about these is very simply this, that the whole policy of the South African Government is to maintain a fairly careful balance in the distribution of the population between Bantustans and white areas, so-called.

In other words, only those Africans or nonwhites are allowed to reside and work in white areas who serve the purposes of the economy, and this has been stated very clearly by a number of responsible South African officials. In order to operate that policy they have to have some sense of how much labor they need and how much spare capacity they have in the labor force.

So they must know something about unemployment in the urban areas, they must have some sense of how it is moving. They must, as well, know what the population of their reserves are, of the Bantustans with some precision. They administer these territories, they have to provide practically all of the infrastructure expenses of these territories and that is very little because they have no taxation capacity to speak of.

So they must know how much gainful employment is possible within these territories and they must know as well how much is not, which could be deduced simply by subtracting the one from the other.

I am quite sure that they know precisely how much unemployment there is among Africans, and the fact that they don't produce this kind of data for public inspection speaks for itself.

Mr. DIGGS. Another interesting set of figures here is in this table 15, comparative figures on income. In 1960 blacks received 26 percent of the national income and in 1969, 19 percent, which would indicate that the economic situation of blacks is getting worse and that the distribution of income is becoming more unequal.

I would be interested in your comments on that.

Mr. IRWIN. In checking with some of our staff who are far more knowledgeable about South Africa than I am, sir, these statements conformed to their impressions. In dollar terms blacks may be somewhat better off than they were 10 years ago but, in proportion to GNP, there is no doubt their position has worsened.

Mr. DIGGS. What effect do you think this gap between average black and white, where the average manufacturing wage has risen from 5 to 1 in 1966 and to 7 to 1 in 1970, might have on U.S. corporations that are such a substantial part of that economy?

Mr. IRWIN. Do you know what figures you are reading from, Mr. Congressman?

Correct me if I am wrong because you have been to South Africa and I have not, but my impression is that some firms are making a rather serious effort to improve wage payments to blacks; not all firms, but some certainly.

Again we don't have figures for the practices of U.S. firms in South Africa.

Mr. DIGGS. One of the interesting points here which constantly comes up—I know Congressman Vander Jagt has had this come up in dialog on this subject and I certainly have, and others—is about whether or not the economic development of South Africa helps all

sectors of that mixed population. There was a big advertisement in Fortune magazine entitled "South Africa, The Key To The Economy" in July of 1970 and one of the things that they alleged was that South Africa's stability rests on that fact. People are talking about the sugar quota matter, for example, saying, "Well, everybody gets something out of it so; therefore, it is counterproductive to the interests of the black majority to oppose it."

You talk about cutting out the sugar quota or cutting it down, or for that matter, taking anything away from that economy with the implication being that despite the inequities in the system that all sectors of the economy are being favorably affected, that everybody is the beneficiary of the economic development of that country.

Would you care to make any comment, either one of you, on that?

Mr. IRWIN. In talking to some of my colleagues in the Department, it is their opinion that it would clearly be counterproductive to the economy of South Africa for the U.S. firms to pull out. These are people who are very, very sympathetic to the improvement of blacks in South Africa.

In talking about trade union representatives, they urged that the firms not pull out. However, it is also true that we need to influence firms more to engage in more farsighted labor policies than perhaps they have in the past.

Mr. DIGGS. Mr. Gervasi, would you want to comment?

Mr. GERVASI. Yes, sir.

I am not quite clear precisely what the reasoning of the Secretary's colleagues is so I cannot really comment on that, but there is a growing feeling, I think, among people who are concerned that the southern African question is going to explode with very unhappy consequences for everybody, that an enormous international pressure must be developed in order to try to find some way of assisting in the liberation of the nonwhite population of South Africa.

As you know, in May of 1964, the United Nations called for a constitutional convention in South Africa. Now, obviously, any possibility of that sort is not feasible in the present political context. Therefore, the question arises whether there is any possibility of international pressure creating a situation with serious international pressure, the serious isolation which could create a situation in which, say, that kind of thing might happen.

I think that there is no doubt that the initial consequences of, say, a cut off of trade and investment by the major Western countries would be to create a disastrous situation—from the point of view of the white minority in South Africa, an unmanageable political situation.

It would also be a situation which would be hard for everyone who is involved in South Africa because the initial consequence would obviously be a lot of disruption and that would be costly to everybody.

The ultimate consequence, I think, is what one has to keep in mind. If disengagement by the West would assist in the creation of the kind of context which would promote real progress, then I think it is something that we have to consider.

To my mind there is no doubt that the only way will be to apply pressure which is historically unprecedented, but I think that could

be a new and very important experiment for the international community. In fact I think that if we don't find something like that kind of a solution this whole part of the world is going to explode.

Mr. DIGGS. Well, we have noted that you have addressed points pertinent to that particular issue in your study, "Industrialization, Foreign Capital and Forced Labour in South Africa."⁴⁶

With regard to the use of convict labor, on the 23d of April of this year, the question was raised in the South African Parliament—and if Mr. Wachholz is aware of that, I would like to get some comments here—to which members of the public or other organizations, or authority, commented: "On what condition is unskilled prison labor hired out?" That was the question. The answer by the Administrator of Prisons was, "To any person, body of persons, organization, or authority which the Commission of Prisons thinks fit."

Has the Department of Labor made any efforts to ascertain whether or not one or more of the 300 U.S. companies in South Africa are using convict labor and which companies which export to the United States are employing such labor?

Mr. IRWIN. To my knowledge, sir, we have made no inquiries and I don't believe many of these firms are exporting to the United States.

Mr. DIGGS. Well, what is the basis for your response without some investigation of it? That seems to suggest somebody looked into it.

Mr. IRWIN. That question was called to my attention, sir, the response on the floor of the Parliament, and to my knowledge—

Mr. DIGGS. Did someone formally request that the Department make an investigation of this?

Mr. IRWIN. No, sir.

Mr. DIGGS. Did anyone write to the Department on this subject?

Mr. IRWIN. No, sir.

Mr. DIGGS. Did somebody mention it to you casually some place?

Mr. IRWIN. Yes, sir. One of my staff called this to my attention when we were preparing my testimony for you.

Mr. DIGGS. Well, what does it take to make such an inquiry? Do you have to have something formal on it?

If a staff person brings it to your attention, is that sufficient to initiate it?

Mr. IRWIN. Some of our requests, Mr. Congressman, are unproductive. Our only access to U.S. firms in South Africa would be through correspondence with them there.

Mr. DIGGS. Or through the Labor attaché?

Mr. IRWIN. We might transmit it that way.

Mr. DIGGS. Or through cooperation which one might expect our Embassy to be able to obtain in order to get it for you?

Mr. IRWIN. I will be surprised if that is successful. I would be glad to see that a formal communication is sent to the Labor attaché and see what results.

Mr. DIGGS. Well, let this constitute a formal request.

Mr. IRWIN. Fine, sir.

⁴⁶ For complete text of "Industrialization, Foreign Capital and Forced Labour in South Africa" by Sean Gervasi, United Nations, Unit on Apartheid, Department of Political and Security Council Affairs, New York, 1970, see p. 401 of the appendix.

Mr. DIGGS. Please include in such information, the precise use, the employer, the location, the product of any labor under this category. We will leave it up to you to get the information to us in due course.

Mr. IRWIN. Thank you, sir.

(The information requested follows:)

We are advised that over recent years our Embassy and Consulates there have had no evidence indicating that convict labor has been used by American firms in South Africa. They advise that according to reliable sources, use of prisoners is restricted to farm areas and not to industry, American or other.

Mr. DIGGS. What about the status of the importation of fruit from South Africa? That seems to be a growing industry here involving U.S. labor interests. Have you taken any note of that development?

Mr. IRWIN. As far as I understand, sir, the fruit that is now being imported into this country from South Africa is certified by quasi-public agencies in South Africa that it is not produced with any convict labor and that the U.S. authorities charged with enforcing the customs regulations, the Treasury Department, have accepted such certification.

Mr. DIGGS. Now, you have used the word "watchful interest" on these matters. What actions does the Department take to see to it that statutory prohibitions on importing goods produced by forced labor is enforced and that the importation of goods from South Africa in that category is actually prohibited?

Mr. IRWIN. The staff has informed me, sir, that every incident that has ever been brought to their attention has been routed to the proper authorities for investigation.

Mr. DIGGS. Well, in other words you don't take the initiative. Perhaps the word "watchful interest" was really a misnomer here because unless somebody brings it to your attention you have no monitoring system?

Mr. IRWIN. We are unable to provide that with our resources, no, sir. We are unable to provide that kind of monitoring system.

Mr. DIGGS. Even in those places where you have a labor attache?

Mr. IRWIN. That is correct, sir.

May I emphasize, sir, that the Labor attaché is an employee of the State Department.

Mr. DIGGS. How was he selected? Do you have anything to do with it at all?

Mr. IRWIN. The procedure——

Mr. DIGGS. Is he on your payroll in any way?

Mr. IRWIN. He is not on our payroll in any way. The recommendation by the State Department is sent to our office for approval or disapproval but the employees are hired and paid for by the State Department.

Mr. DIGGS. I yield to counsel at this point.

Mrs. BUTCHER. Mr. Chairman, you just made a formal request in connection with the produce and goods imported here in connection with convict labor. I would think it might be helpful, if a formal request is necessary, for an investigation of all the goods being imported from South Africa to see if they comply with the definition of goods produced by forced labor or indentured labor.

Mr. IRWIN. I think that inquiry should more properly be directed to the Secretary of the Treasury, Madam Counsel.

Mrs. BUTCHER. It is hard to see the demarcation between the lines of authority of Treasury, which is responsible for enforcement, and that of the Department of Labor which might have a certain role in the initial evaluation of the labor laws.

Mr. IRWIN. The Department of Labor has no enforcement authority of any kind. I think an issue of this nature should more properly be directed to the Treasury Department.

Mrs. BUTCHER. Mr. Chairman, then perhaps we could address that to the Treasury tomorrow.

Mr. DIGGS. The gentleman is coming tomorrow.

Mrs. BUTCHER. Congressman Vander Jagt inquired about the definition of forced labor. Perhaps article 1 of the ILO Convention. I think it is, of 1929, on Forced Labor which carries the definition of such labor should be inserted in the record and also any other relevant definitions from the ILO Conventions, including the definition from the 1957 Convention on the Abolition of Forced Labor, if you could supply those.

Mr. IRWIN. Yes.

Mr. DIGGS. Without objection, it is so ordered.

(The information requested follows:)

(See also p. 502 of the appendix for the complete texts of Convention 105 concerning the abolition of forced labor and Convention 29 concerning forced or compulsory labor.)

FORCED LABOR—HOW THE ILO DEFINES IT

The International Labor Organization has adopted two Conventions dealing with forced labor: Convention No. 29, concerning Forced or Compulsory Labor (adopted June 1930), and Convention No. 105, concerning the Abolition of Forced Labor (adopted June 1957).

Convention No. 29 defines forced labor as follows:

ARTICLE 2

1. For the purposes of this Convention the term "forced or compulsory labor" shall mean all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily.

2. Nevertheless, for the purposes of this Convention, the term "forced or compulsory labor" shall not include—

(a) any work or service exacted in virtue of compulsory military service laws for work of a purely military character;

(b) any work or service which forms part of the normal civic obligations of the citizens of a fully self-governing country;

(c) any work or service exacted from any person as a consequence of a conviction in a court of law, provided that the said work or service is carried out under the supervision and control of a public authority and that the said person is not hired to or placed at the disposal of private individuals, companies or associations;

(d) any work or service exacted in cases of emergency, that is to say, in the event of war or of a calamity or threatened calamity, such as fire, flood, famine, earthquake, violent epidemic or epizootic diseases, invasion by animal, insect or vegetable pests, and in general any circumstance that would endanger the existence or the well-being of the whole or part of the population;

(e) minor communal services of a kind which, being performed by the members of the community in the direct interest of the said community, can therefore be considered as normal civic obligations incumbent upon the members of the community, provided that the members of the community or their direct representatives shall have the right to be consulted in regard to the need for such services."

This definition is supplemented by Convention No. 105, which provides:

ARTICLE I

Each Member of the International Labor Organization⁴⁷ which ratifies this Convention undertakes to suppress and not to make use of any form of forced or compulsory labor—

(a) as a means of political coercion or education or as a punishment for holding or expressing political views or views ideologically opposed to the established political, social or economic system;

(b) as a method of mobilizing and using labor for purposes of economic development;

(c) as a means of labor discipline;

(d) as a punishment for having participated in strikes;

(e) as a means of racial, social, national or religious discrimination.”

Mrs. BUTCHER. Now, with respect to the question of the labor situation in the Portuguese territories, there was a complaint against Portugal for the use of forced labor in Angola and Mozambique and there have been regular reports since then by the ILO on that.

I wonder whether certain data and materials could not be gathered from those reports in response to our request for information?⁴⁸

Mr. IRWIN. We will examine those reports to see if there is material that is pertinent for you. (See p. 516 of the appendix for relevant excerpts from the Report of the Committee of Experts on the Application of Conventions and Recommendations: Complaints against Portugal concerning its violation of the Forced Labor Convention.)

Mrs. BUTCHER. All right. In the same connection I believe it is the Economic and Social Council, but at least it is one of the bodies of the U.N., that makes regular reports on trade union rights—reports which are rather comprehensive and they might also be helpful.

Earlier when you were speaking to Congressman Vander Jagt you said that at the conferences involving apartheid—at the international conferences where they discuss forced labor and apartheid, and so forth—that a line is drawn between the responsibility of State and Labor and that the State person addresses the political questions while Labor addresses the others.

What is the political question there?

Mr. IRWIN. Well, to begin with I am referring only to sessions of the ILO. That is the forum in which we operate. The line between the political and economic question is sometimes difficult to determine but you are dealing with a policy of a government of South Africa and generally in terms of handling that theme, we relied on our colleagues in the State Department.

Mrs. BUTCHER. Even where it is a question involving the labor situation?

Mr. IRWIN. We have participated jointly, to my knowledge.

Mrs. BUTCHER. Mr. Irwin, with respect to the question on those U.S. firms which hire their employees under a system of contract labor—not the general system of hiring labor which is operative throughout the Republic—but one like the system operating in South-West under SWANLA, you said you might have some difficulty in getting that in-

⁴⁷ Convention of the Abolition of Forced Labor, 1957.

⁴⁸ As of this date, no reply has been received from the Department of Labor. It is hoped that the Department will supply the information requested which will then appear in pt. III of these hearings.

formation. But Commerce has a list of U.S. firms in South Africa, and, if someone on your staff could correlate that with their information on the contract labor authority, such as SWANLA in Namibia and the relevant ones for South Africa, Angola, and Mozambique, perhaps that would help us get the information.⁴⁹

Mr. IRWIN. I am not optimistic.

Mrs. BUTCHER. But you would try?

Mr. IRWIN. The staff will certainly take a look into this.

Mr. BUTCHER. Thank you.

Mr. DIGGS. If you have any difficulties, Mr. Secretary, I wish you would also report that to the subcommittee, too, because if any other agency is uncooperative or if the South African Government should not be cooperative, the subcommittee requests to be informed. Don't they ask you for statistics? Don't you provide them with information and certain services upon request, expeditiously?

You know, two can play at this game.

Mr. IRWIN. I regret to say, Mr. Chairman—

Mr. DIGGS. If you run into any problem in getting this information, I would like for you to let us know in writing. I would like to see it in writing that the South African Government has refused to provide you with certain information. I don't see why you could not say that because I am sure that there are certain amenities, certain relationships that you of necessity have to engage in with the South African Government with your counterparts and I think this subcommittee ought to know about it and get some explanation as to why this information is not forthcoming.

You have been candid enough to provide what you have direct access to and I don't think we ought to let your South African counterparts off the hook.

Mrs. BUTCHER. Mr. Chairman, I think it would be helpful, in regard to this whole question, to know the implications for U.S. labor of not only the cheap labor system in South Africa but of their effect with respect to exports. So the question relates to the implications on our labor system of their labor system both for U.S. labor and for U.S. imports.

If there could be such an analysis made and best estimates provided, it would be, I think, very helpful.⁵⁰

Mr. DIGGS. I make that request on behalf of the committee.

Mr. IRWIN. Mr. Chairman, that is an extremely complicated and difficult problem which I am certain cannot be handled long distance. It is a problem that affects us in many, many countries, not just South Africa. It is a problem that we are hopeful we can spend some resources on this next year because we consider the matter very important.

I know that we don't have the staff or the finances available to us now to do this kind of a job on South Africa.

Mr. DIGGS. I can understand what you are saying but that reflects a thread that runs through many of our hearings and that is to try to equate South Africa with any other part of the world.

⁴⁹ As of this date, no satisfactory reply has been received from the Department of Labor. It is hoped that the Department will supply the information requested which will then appear in pt. III of these hearings.

⁵⁰ As of this date, no reply has been received from the Department of Labor. It is hoped that the Department will supply the information requested which will then appear in pt. III of these hearings.

Now, obviously, we have certain problems about cheap labor and how it may undercut the American markets in other parts of the world, notably in the Orient and so on. But I think one of the principal points we want to emphasize is the uniqueness of this South African system, that the dimension of racism is entirely different than a similar cheap labor situation in Japan or someplace like that.

So, when you look at it in this context, then perhaps the resources can be found and the basis for obtaining the resources can be found to get the information because it is a unique system.

Everybody ought to understand this. I have had members here try to say, "Well, why should we? We are getting chrome from Russia, why should we not get it from Rhodesia because of the ideological differences?" But you cannot equate Russia with Rhodesia, you cannot equate the cheap labor conditions here with the cheap labor supply in the Orient and certain parts of Latin America and so on.

So, any response of that character is just as unacceptable as far as this subcommittee is concerned.

Mrs. BUTCHER. Mr. Chairman, on that point—Mr. Irwin, earlier you made a reference to the Soviet Union and to the question of forced labor behind the Iron Curtain.

Mr. IRWIN. Yes.

Mrs. BUTCHER. In connection with, I think, Mr. Vander Jagt's question of concept of forced labor, and I wish you would go into that more fully.

Mr. IRWIN. What I wanted to emphasize was that the standing committees of the ILO that look into this problem have consistently refused to look into the problem behind the Iron Curtain. There are a large number of countries that engage in forced labor practices that a majority of the membership of the ILO prefer not to look into.

Mrs. BUTCHER. But the ILO has looked into the question not only into the Portuguese territories but into South Africa.

Mr. IRWIN. Yes.

Mrs. BUTCHER. And has come to certain definite conclusions.

Mr. IRWIN. Indeed.

Mrs. BUTCHER. Mr. Irwin, you stated that the wages paid to employees by U.S. embassies in their personal capacity, I guess, is not generally a subject of major concern of the Department and that it is only in spotty cases that you receive information on that subject. Have you received any such information on this matter in regard to South Africa, our practices there?

Mr. IRWIN. If I understand you correctly, the answer is "No."

Mrs. BUTCHER. So that the Department of Labor does not know of any messages reporting the wages paid to USG local personnel in South Africa?

Mr. IRWIN. No, I am not aware of that information.

Mrs. BUTCHER. All right. Could you check on that and, if there is such, insert it in the record?

Mr. IRWIN. I am quite certain that we do not have such information.

Mrs. BUTCHER. But if you do, you would insert it in the record?

Mr. IRWIN. Yes.

(The following is the Department of Labor's submission in response.)

Mr. Irwin stated in his testimony that the Labor Department did not have information on the wages paid by the U.S. Embassy in South Africa to local

employees or by U.S. Government personnel to their personal employees. He agreed that if a further check of messages from South Africa revealed such information, he would insert it in the record. The requested information was not found. I understand, however, that the Department of State intends to respond to you direct concerning these two items.

Mrs. BUTCHER. Mr. Chairman, in his treatise, Mr. Gervasi has dealt in paragraphs 37 to 85 on the question of the extent of the forced labor situation in South Africa.

(See p. 401 of the appendix for this treatise.)

Mr. DIGGS. Mr. Secretary, do you agree or not that there is a condition of forced labor in South Africa?

Mr. IRWIN. Well, we have quite a bit of evidence that there is forced labor in South Africa in places, Mr. Chairman. I don't think I would go as far as some of our witnesses this afternoon in their definition of forced labor.

Mr. DIGGS. Well, has this fresh concept been presented in this form?

What would happen if the committee would formally ask the Department of Labor either individually or in conjunction with the Attorney General to render an opinion on this question?⁵¹

Mr. IRWIN. I would be glad to review the testimony of this afternoon and submit a memorandum on this point.

Mr. DIGGS. Mr. Wachholz, what would you think of a formal request on this matter from the Attorney General and/or the Department of Labor?

Mr. WACHHOLZ. I am not really that keyed into procedures of congressional subcommittees. I am frankly just shocked that these practices can go on and this legislation has to be brought to the attention of people in the administration. Maybe they have not been really aware of section 307 in the past, but once they learn about it all they have to do is take a good look at it.

I hope I have shed some light on it.

Mr. DIGGS. You certainly have.

Mr. WACHHOLZ. By giving some background on what Congress intended originally, I trust that they would have to investigate. That was our purpose in coming here—just to show that you don't have to go any further than the South African legislation.

Now, Mr. Gervasi, and others from many of the international organizations and the U.N., have gone down and seen the actual conditions. From reading the papers I understand that you yourself, Mr. Chairman, have gone down there. I have not been there.

I can only offer what I have done, that is, perused the legislation and added some research on some of the publications of the U.N. There is a crying need for more investigation. If this statute doesn't apply across the board, which I think it does—I mean, when you have a system of legislation like the South Africans have, there is just no question but what that is forced labor, however narrowly you construe the term.

But whether or not you apply section 307 to ban all imports from South Africa or not, an investigation is certainly called for in convict

⁵¹ As of this date, no reply has been received from the Department of Labor. It is hoped that the Department will supply the information requested which will then appear in pt. III of these hearings.

labor and indentured labor under penal sanction. There are enough statutes on the books in South Africa that make those practices mandatory. Industries down there, American or domestic, have no choice.

Again the forced labor aspects of it demand a thorough investigation because the administration has resources beyond the ability of any private person. I would like to investigate it further.

I think my initial conclusions based on the legislation would be borne out, but I just don't have the resources.

Mr. DIGGS. You have done tremendously well with what resources you have and I admire your modesty.

Of course we have two agencies involved here and after we hear the Treasury Department tomorrow, which has control over the Customs as Secretary Irwin has pointed out, then we will have the basis for making the formal requests.

So, Mr. Secretary, you are being alerted 24 hours ahead of our counterpart in the Treasury Department.

Mr. IRWIN. Thank you.

Mr. DIGGS. Mr. Gervasi?

Mr. GERVASI. Mr. Chairman, I wonder if I could ask you a question.

In your opinion are we in the position then of having to hold that the ILO-U.N. ad hoc committee on forced labor was wrong in 1953 to have held that a system of forced labor did exist in South Africa? Would that then be the position in which our Government finds itself?

Mr. DIGGS. Well, not necessarily.

Of course, that is an international agency. We are talking about an interpretation of the U.S. statute which may be subject to a different kind of guideline.

We hopefully would end up on the same side but we just have to understand that it does not necessarily apply.

I am inclined to believe that the ILO finding does have application to this; since other guidelines on the other hand, may be used in connection with opinions from our agencies, as was indicated. So, you know, you have got these differences that you just have to be mindful of in the political process.

Well, is there any other comment?

Any further questions?

Thank you very much.

Mr. IRWIN. Thank you.

Mr. WACHHOLZ. Thank you.

(Whereupon, at 4:02 p.m. the subcommittee adjourned to reconvene at 2 p.m., Tuesday, December 7, 1971.)

U.S. BUSINESS INVOLVEMENT IN SOUTHERN AFRICA

TUESDAY, DECEMBER 7, 1971

HOUSE OF REPRESENTATIVES,
COMMITTEE ON FOREIGN AFFAIRS,
SUBCOMMITTEE ON AFRICA,
Washington, D.C.

The subcommittee met at 2:05 p.m., in room 2200, Rayburn House Office Building, Hon. Charles C. Diggs, Jr., (chairman of the subcommittee) presiding.

Mr. Diggs. The subcommittee will come to order.

The hearings of the subcommittee on U.S. Business Involvement in Southern Africa will continue this afternoon.

Today we will examine questions relating to U.S. financial and economic involvement in the minority-ruled countries of southern Africa, South Africa, Namibia, Angola, and Mozambique.

We have asked the Treasury Department to advise us on the following matters: (See p. 532 of the appendix for exchange of letters between Chairman Diggs and the Department of the Treasury regarding the Department's responses to inquiries made by the Chairman at the time of the Department's appearance before the subcommittee on December 7, 1971.)

The financial situation of South Africa with respect to foreign investment;

The amount of capital inflows into South Africa over the past few years;

A breakdown on the areas in South Africa in which this capital is being put; mining, manufacturing, et cetera;

The kind of controls Treasury has on the export of U.S. capital to South Africa;

On the implications for South Africa of our policy with respect to gold;

Various relationships to South Africa in international financial agencies;

Tax arrangements for U.S. businessmen in: South Africa, Namibia, Mozambique, and Angola; and

Treasury enforcement of 19 U.S.C. 1307 with respect to the prohibition of importation into the United States of goods produced by convict, indentured, or forced labor.

Before the question and answer period, we shall also hear an international economist testify on the economic and financial situation and implications of foreign investment with respect to South Africa.

Our first witness is the Hon. John R. Petty, Assistant Secretary for International Affairs, Department of the Treasury, a position which he

has held since being appointed by the President in February of 1968 and prior to that, he was Deputy Assistant, Acting Assistant Secretary and has had special career recognition from the Treasury Department for Exceptional Service Award, the Arthur S. Flemming Award, "One of the 10 outstanding young men in the Federal Service," all of which followed a distinguished career in the military during the Korean war and which followed and was in between an equally distinguished career in the academic world.

So we have great expectations of Secretary Petty this afternoon after this very impressive set of credentials.

Mr. Secretary, you have a prepared statement and you may proceed.

STATEMENT OF JOHN R. PETTY, ASSISTANT SECRETARY, INTERNATIONAL AFFAIRS, DEPARTMENT OF THE TREASURY

BIOGRAPHY

Name: John R. Petty

Title: Assistant Secretary for International Affairs, the Department of the Treasury.

Personal Data :

Date and Place of Birth : Chicago, Illinois, April 16, 1930.

Married : H. Lee Mills, May 11, 1957.

Children : Lawrence T., Robert D., George M., Victoria L.

Residence : 3201 Broad Branch Terrace, N.W., Washington, D.C. 20008.

Permanent Residence : West Lake Stable Road, Tuxedo, New York 10987.

Military Service : Lieutenant (jg), Destroyers, Pacific Fleet, 1951-1953.

Education :

Francis W. Parker School, Chicago, Illinois, 1935-1947.

Brown University, Providence, Rhode Island, 1947-1951.

New York University, Night Law School (1 yr.), 1953-1954.

Career Summary :

Chase Manhattan Bank, New York, August 1953-September 1966.

1953-55—Training Program.

1955—International Department Africa, Western European and Middle East Area.

1958—Assistant Treasurer, Western European Area.

1961-63—Assistant Vice President, Paris Branch.

1963-66—Vice President, Division Executive, Worldwide Projects Division, New York.

Treasury Department, Washington, D.C.

September 1966-January 1968—Deputy Assistant Secretary for International Affairs.

February 1968-May 1968—Acting Assistant Secretary for International Affairs.

May 1968-June 1969—Assistant Secretary for International Affairs.

June 1969-Present—Nominated by President Nixon for reappointment and confirmed by the Senate.

Professional and Civic Activities :

Council on Foreign Relations rapporteur, 1953-1961, now member.

Defense Industry Advisory Council, Export Sub-Committee, 1963-1966.

National Export Expansion Council, Export Action Committee, 1965-1966.

Special Career Recognition :

Treasury Department Exceptional Service Award, December 4, 1968.

Arthur S. Flemming Award, "One of the Ten Outstanding Young Men in the Federal Service, 1968" February 13, 1969.

Mr. PETTY. Thank you, Mr. Chairman.

I appreciate your introduction, and I want to thank you again for permitting me to change my testimony to this afternoon from yesterday.

The four matters that I understand you wish to hear from me about are, first, our foreign investment in South Africa.

First, our foreign investment there, and the extent to which it's subject to Federal supervision.

Second, gold—and more specifically how the role of gold in the international monetary system has been affected by the President's new economic policies, how we see that role evolving in the future, and what the impact will be on South Africa as a leading world producer of gold.

Third, U.S. tax treatment of income earned on investments in South Africa, and what we judge its consequences to be.

And finally, section 1307, title 19, of the United States Code—the so-called convict labor statute—and its applicability, as administered by the Bureau of Customs, to U.S. imports from South Africa.

I shall comment briefly in turn on each of these four points.

FOREIGN INVESTMENT

You have already received testimony on the broad aspects of foreign investment in South Africa from Assistant Secretary Scott of the Department of Commerce. We understand that foreign direct investment there now totals in the neighborhood of \$5 billion. The U.S. share, as of the end of 1970, is estimated to be \$860 million, or about 15 percent of the total. The nation with the largest amount by far is the United Kingdom.

Department of Commerce data shows that roughly 50 percent of the total U.S. investment in South Africa, or about 7 or 8 percent of the \$5 billion total, has gone into manufacturing. Petroleum accounts for about 20 percent and mining 10 percent, with the remaining 20 percent being dispersed in other sectors. We have no data on the sectorial breakdown of investment from other countries.

While South Africa remains one of the largest recipients of U.S. investment on the African continent (being surpassed by Libya, however), in recent years U.S. investment going to the developing countries of Africa has risen much more rapidly. Whereas South Africa is estimated to have had approximately 33 percent of U.S. investment in Africa in 1960, the percentage has now fallen to about 25 percent.

South Africa has been treated as a developed country under the U.S. foreign direct investment program which regulates private capital flows for balance-of-payments purposes.

In other words, it is classified in schedule C, the most restrictive of the three schedules designated under that program. As with other developed countries, we feel that the principal effect of the program has been to limit U.S. source financing of American direct investment in South Africa rather than the aggregate amount of the investment.

It appears to have been quite effective. For the last 3 years for which data is available, the net outflow of new capital from the United States to South Africa has been irregular. It amounted to only \$6 million per year in both 1968 and 1969.

In 1970, it rose to \$44 million, but this was still exceeded very substantially by a return flow of \$78 million in earnings to the United States in that year.

I should point out, too, that South Africa is subject to the interest equalization tax, South African borrowers have raised little or no capital in our financial markets since this tax was imposed 8 years ago.

The administration's attitude and policy toward direct investment in South Africa within the general framework of these balance-of-payments control was outlined for you by Mr. Scott. It is neither to encourage nor discourage direct investment there, or in other developed countries.

I should add just a word specifically on U.S. investment in South-West Africa, which in amount is relatively small. The United States gives full support to the U.N. resolution of 1966 which terminated the League of Nations mandate giving South Africa control of this territory. Accordingly, a policy was adopted in May 1970 under which the Departments of State and Commerce specifically discourage U.S. investment in South-West Africa by making clear to potential investors that they could expect no assistance from the U.S. Government in defense of investments there based upon rights acquired from the South African Government after passage of the 1966 U.N. resolution.

Turning now, Mr. Chairman, to the second item that you referred to, the subject of gold, I shall begin with reference to the situation as it existed prior to the two-tier understanding reached among the G-10 countries in March of 1968, and then comment briefly on more recent events.

Prior to March 1968, the United States and other nations, by standing ready to sell gold through the London gold pool, prevented the price of gold in the private market from rising much above the official price of \$35 per ounce. This was relevant because as long as there was a transfer between private holdings and official holdings, by segregating the private from the official market, we could let the private market move without having any implications for the official gold price.

At the same time, the willingness of nations to accept new gold into their official reserves in effect prevented the private market price from falling below \$35 per ounce.

With the two-tier arrangement agreed upon in March 1968, this situation came to an end. The official gold holdings of nations and the private market were separated. Both the ceiling over and the floor under the price in the private market were removed.

Following the two-tier understanding—and I should point out that South Africa was not a member of the group of 10—an agreement was then reached with South Africa within the framework of the IMF. Pursuant to this, South Africa, in essence, has agreed to sell its newly mined gold into the private market in an orderly manner.

During 1971, all newly mined South African gold has been sold in this fashion. It has contributed, I think, to a generally orderly gold market and lower prices than would have prevailed had South Africa been free to withhold gold sales and manipulate the market as it saw fit. At the present time, South Africa accounts for almost 80 percent of the newly mined gold in non-Communist countries.

The only circumstances in which newly mined gold may now be sold to monetary authorities by South Africa is if the market price should fall below \$35 per ounce, and then only to the extent South Africa needs foreign exchange to meet a balance-of-payments deficit.

To date, this provision has had practical effect for only about 2 months during the first quarter of 1970.

Sales to the IMF or other monetary authorities are now being made only from South African official reserve stocks of gold and are also limited to the nation's foreign exchange need. In the first half of 1971, \$105 million was sold to the IMF under this formula and none so far in the second half, except for payment of South Africa's own quota increase of \$30 million.

Total monetary sales in 1971 through September were \$155 million.

The suspension of dollar convertibility into gold by the United States as announced by President Nixon on August 15 has not affected the operation of the agreement with South Africa and the two-tier gold system. South Africa has continued to sell its newly mined gold into the market.

On Monday, the private market gold price was \$43.975 per ounce—about the same as the high reached in early August prior to announcement of the new U.S. economic measures (\$43.94 per ounce).

As to the future of gold in the international monetary system, there is rather little that can be said right now. While we are hopeful for an early agreement on exchange rate realignment and other related measures, longer term reform of the international monetary system will require extended study and discussion. This has just begun; it is impossible, therefore, now to predict the exact shape that the new system will take.

I can make quite clear, however, that we believe, as many other nations do also, that the role of gold in the system should be reduced, if not eliminated, over time, and nothing which has occurred in our discussions with the finance ministers of the other G-10 countries in recent days and weeks is inconsistent with this view.

We contemplate no substantial influx of new gold for the future into the world monetary system. Gold newly mined, we expect, will continue to move into the private market. I would not wish to venture any prediction on what will happen in the long run to the price of gold in that market.

It will depend, of course, on a great many demand and supply factors. Progressively, it will become just another world traded commodity—jute, copper, you name it.

The deemphasis of gold we seek in the international monetary system, however, should be an influence working in a downward direction.

TAXATION

I turn now to taxation. There are no special provisions in the U.S. Tax Code which either encourage or discourage investment in South Africa. There are income and estate tax treaties between the two countries which were signed around the beginning of 1947 and finalized through exchange of ratifications in 1952.

These treaties, in many respects, are similar to those we have with other countries. They provide a measure of certainty to U.S. individuals and businesses as to the tax consequences of their activities in South Africa and thus avoid a distraction for U.S. investment. The treaties also provide relief from double taxation.

Many benefits normally provided under our tax agreements with other countries, however, are not applicable in the treaties with South

Africa. The income tax treaty is unusual, for example, in that it does not provide for a reduction in South African taxes on interest, dividend, or royalty income paid to the United States on American-owned investments or in U.S. taxes on such payments to South Africa.

In fact, neither treaty provides any reduction in effective tax rates for investors of one country in the territory of the other below those to which they would be subject in the absence of the treaties.

Here again I should make specific mention of South-West Africa.

Mr. DIGGS. Before that, Mr. Secretary, could you provide us with copies of these treaties? You didn't bring them with you?

Mr. PERRY. No, but I would be happy to.

In view of the illegality of South African control of this territory under the 1966 resolution of the United Nations, we believe there is a question as to whether taxes imposed and collected by the South African Government on income earned in southwest Africa can properly be considered taxes under U.S. legislation for purposes of granting a foreign tax credit.

CONVICT LABOR STATUTE

This brings me then to the convict labor statute (sec. 1307, title 19, United States Code). This statute in essence prohibits the importation into the United States of goods produced by prison labor where the work is performed as a result of coercion and without reasonable compensation.

I am advised by the Bureau of Customs that since this statute was enacted in 1930, one case involving South Africa has come up under it, and it was promptly resolved to the satisfaction of U.S. authorities.

This case arose from the discovery in 1965 that small amounts of deciduous fruit—I believe peaches—grown on South African farms employing prison labor was being imported into the United States. The Bureau of Customs, with the cooperation of the South African Deciduous Fruit Board, thereupon developed procedures utilizing a certificate of origin and a numbered coding system to assure that there would be no further shipments to the United States of fruit produced on the farms where convict labor was employed.

The procedures then adopted are still in effect; customs has had no difficulties with them, and is satisfied that they have been and are effective in accomplishing the intended purpose. In addition, we understand that the Department of State has urged upon the South African Government that the use of prison labor on South African farms be abolished.

Mr. Chairman, I wish briefly to underline that President Nixon has made abundantly clear that this Government abhors the racial policies of the South African regime. He has emphasized, too, that it is our policy to encourage that regime, in whatever way we can, to change those policies. There is much, I believe, that we can effectively do—first and foremost, by our example in working toward the rapid elimination of all aspects of racial discrimination here at home.

We must recognize, though, that South Africa is a separate and sovereign nation, and that there are severe limits on the influence which we can bring to bear there.

We must do what we can. But it is important that we avoid gestures which—no matter how right and justified the moral indignation they

represent—would not effectively serve the purpose intended, and might rather impede progress toward more humane conditions.

Thank you, Mr. Chairman.

Mr. DIGGS. Thank you, Mr. Secretary.

I would like also at this point to call upon our next witness for his opening statement and then we will suspend for 10 minutes while Congressman Vander Jagt and I go over to vote.

Mr. Gervasi, from the Institute of Commonwealth Studies of Oxford University, is a former member of the Bureau of the Budget for the U.S. Government, and is acknowledged to be one of our leading international economists.

You have a prepared statement, Mr. Gervasi. Why don't you begin that until the bell rings.

STATEMENT OF SEAN D. GERVASI, RESEARCH OFFICER IN ECONOMICS, INSTITUTE OF COMMONWEALTH STUDIES, OXFORD UNIVERSITY

Mr. GERVASI. Mr. Chairman, I think the time has come when we must consider the political implications of American economic policy toward South Africa.

Now that policy is clearly political and, as I argued yesterday, our position is one of acquiescence in practices which have been described by the United Nations as forced labor.

During the next 5 years, South Africa will increasingly become a focus of controversy in the world arena. There are two reasons for this. The first is that a major confrontation is developing in Africa over the question of white supremacy. Independent African countries are dedicated to the elimination of apartheid, and the nonwhites of South Africa, Namibia, Rhodesia, Angola, and Mozambique are struggling for their own liberation.

At the same time, the Western powers are becoming more and more alarmed about the possible outcome of this confrontation. For they have important interests in political stability in the whole area.

The great danger is that, as the area of conflict widens and as the liberation forces grow stronger, the white regimes will draw the Western powers into supporting them. The consequences of such support, of which there are growing signs, would be far-reaching, to say the least.

Western countries, and particularly Great Britain and the United States, are already deeply involved with South Africa economically. The South African economy is an integral part of the Western economic system. Western powers trade with South Africa, receive important mineral exports from that country, and have substantial investments there.

The joint dependence of the Western industrial countries on South Africa must be considerable. It has yet, of course, to be carefully measured. But that would not be a difficult task.

South Africa's importance to the West, however, cannot be gauged in purely economic terms. Nor can one speak of the importance of South Africa alone. South Africa is a wealthy and powerful country. It has the only modern industrial complex south of Milan. It is not only economically but militarily powerful.

It is consequently bound to exert an important influence in the whole of Africa south of the Sahara, for good or ill. This is what makes it politically, as well as economically, important to the West. If the confrontation over apartheid should lead to a radical transformation or revolution in South Africa, the consequences would be felt throughout the continent.

Conservative western spokesmen therefore fear the confrontation which is now developing. Although they condemn the racialism of the white regimes, they believe that there is much more than that at stake in southern Africa. Many have come to believe that there are only two possibilities for southern Africa.

The first is that the white regimes will become stronger and survive the challenge of the liberation movements in independent Africa. The other is that there will be an explosion which will unsettle the whole continent.

Sir Arthur Bryant recently expressed this view quite neatly in the illustrated *London News*:

The choice for the West is, therefore, whether to bring down the present regime in South Africa by an economic blockade, war and Communist-inspired and directed racial revolution . . . or, by maintaining the maximum possible trade and social links with the right European nation at the Cape, endeavor to liberalize its public opinion and wean its government from an extremist, tyrannical and, ultimately, suicidal course.

It is not without significance that this argument figures prominently in discussions of the southern African situation found in the military and strategic journals.

This appears to be a fairly representative view in certain circles. It is frequently heard in the House of Commons. And it is in England that the lead on Western policy toward South Africa is apparently being given. The conclusions which are drawn from this view are even more striking.

In a recent issue of NATO's "Fifteen Nations," Major E. Hinterhoff, one of Britain's foremost military analysts, argues that:

In the present global confrontation between Communism, regardless of whether it is the Soviet Union or the Red China, and the Free World, the main issue is the survival of white South Africa as a bastion of the West. (*Italics in the original*).

This seems a dangerously simplistic view. South Africa is doing everything it can to convince western governments that it is a correct view. If we wish to avoid the consequences of an entanglement which might lead to western intervention on the wrong side in southern Africa, then it is urgent that we should examine carefully its merits.

Western countries, and particularly Britain, the United States, and France, are already giving considerable assistance to South Africa and to Portugal. "Assistance" need not consist of crude military aid. It is a concept which embraces a whole spectrum of possibilities. Assistance includes economic and technical aid, political cooperation, and diplomatic pressure, to name only a few of its forms.

There is no doubt that western governments are worried about southern Africa. And no doubt as well that assistance, public and private, has increased substantially in scale during the last few years.

Let us look at the economic assistance which western countries, including the United States, are giving to South Africa. It is important:

to keep in mind, first of all, that these countries are choosing to continue, indeed to expand substantially, their "normal" economic relations with South Africa and Portugal.

And that is an option which they have chosen in a situation of gathering danger. There is no doubt, and the point has been made repeatedly by various United Nations bodies that this economic assistance is of crucial importance to South Africa. For it is upon that country's economic prosperity that its strength and military power are founded.

South Africa has always been an important outlet for foreign investment. The fact that it is now an independent republic pursuing its own course in the face of considerable international opposition, has not changed this.

Foreign capital still flows to the south in abundance. By 1968 the total of foreign investments had increased to Rand 4,583 million, an increase of approximately 65 percent since 1956.

During the 1960's, in other words, foreign investment in South Africa was increasing at a rate of roughly 5 percent per year. This was higher than the rate of increase in investment domestically of many countries which were sending funds to South Africa.

There are several reasons for the growing importance of foreign investment, and especially direct investment, in South Africa in the last decade.

The wealthy countries, first of all, need profitable outlets for funds. Rates of return in South Africa are extraordinarily high. So funds are attracted from abroad.

Secondly, many British and American multinational corporations are already established in South Africa. It is easy, especially in times of "prosperity," for them to invest retained earnings.

Lastly, and I think this is a particularly important reason, many multinational corporations are using South Africa as a base from which to export to Africa. They benefit from cheap labor there and from the industrial infrastructure which only South Africa can offer in Africa.

There is a further, political reason of course. South Africa is generally regarded as "stable." That is a great advantage. But this means that foreign investment is being underwritten by the repressive apparatus necessary to enforce apartheid.

The continued flow of foreign investment is of crucial importance to South Africa's economy. South Africa is making a desperate effort to continue the modernization of its economy. The pace of growth is being forced by the Government.

This means that the country has persistent, and serious, balance-of-payment problems. The goods which South Africa needs to import in order to modernize, and to become as independent as possible, grow in volume and rise in price. In the last few years the trade gap has been enormous.

In 1970, South Africa had the largest trade gap in its history, and the largest current account deficit. The balance of payments deficits is being partly financed by the inflow of foreign capital. Currently, foreign investment in South Africa is running at a rate of Rand 730 million per year, which is unprecedented.

Inflows of capital help to cover deficits and to permit South Africa to maintain large imports of crucial manufactured goods which it would not otherwise be able to obtain.

Mr. DIGGS. Gentlemen, the subcommittee will declare a recess until a quarter of three.

(Whereupon, a short recess was taken.)

Mr. DIGGS. The subcommittee will come to order and Mr. Gervasi will resume his testimony.

Mr. GERVASI. These capital inflows, furthermore, finance a significant percentage of gross domestic investment. In 1970 nearly 15 percent of all domestic investment in South Africa was paid for out of foreign funds.

The importation of capital is of more than purely quantitative significance. In many instances capital imports are in fact the finance for purchasing sophisticated goods, especially machinery, which cannot be made in South Africa.

A number of countries are now lending South Africa money to purchase such goods from their own export industries. What this means is that foreign capital cannot be replaced simply by finding new sources of finance in South Africa.

For the goods imported are not only important for industrial progress but irreplaceable in the domestic market. The figure for net capital imports is to some extent a measure of the volume of irreplaceable commodities necessary for sustaining economic growth. Large flows of foreign investment are, therefore, directly helping the South African regime to consolidate an economic position which will be used to resist any challenge to the system of apartheid.

Trade is exceedingly important to the South African economy, as important as the flows of investment from Western countries. Fifty years ago, of course, the economy was essentially a colonial one, and dependence on Great Britain was a burden which weighed heavily upon many South African businessmen. One of the main aims of the policy of forced industrialization has been to reduce the country's economic independence.

That aim has in large measure been achieved. South Africa's dependence upon imports is not as great as it once was. As a result of rapid industrialization and a deliberate policy of import-substantiation, the proportion of imports in the gross domestic product has fallen from 30 to 20 percent in the past two decades or more.

Export markets have also been of great importance traditionally. Fifteen years ago nearly 30 percent of production was going overseas. This dependency has now been somewhat diminished. So South Africa has, in the course of rapid industrialization, been moving toward greater self-sufficiency. Its economy is no longer a typically colonial one in that respect. The country, however, is far from being economically independent.

For South Africa's dependence on trade is greater than the figures alone would indicate. There are many countries with a volume of trade as important as that of South Africa. Many of them, however, could produce substitutes for the goods which they import and many could redirect their exports to domestic markets.

South Africa is not in such a fortunate position. Its economy is not fully industrialized. Its principal exports remain the traditionally colonial ones—raw materials and food. These cannot be sold easily in new markets without the risk of losses.

At the same time, many of its imports consist of fairly sophisticated goods, especially capital goods. South Africa does not have a sufficiently developed technological base to be able to produce these on its own in adequate quantities or at reasonable prices. What all this means is that while South Africa is now much more independent economically than it was, it is qualitatively still very dependent upon countries which export sophisticated manufactures and which can provide markets for raw materials and food. It is, in other words, highly dependent upon trade with wealthy Western countries.

It is clear then that South Africa depends upon the West for economic assistance and that that dependence is considerable. There is much more to be said, of course, on the subject of dependence but the conclusion can be taken as roughly correct.

Western countries have been underwriting South Africa's economic expansion. This is tantamount to saying that they have been playing an important role in underwriting the whole system of apartheid.

Why is it that Western governments have not exerted restraint in the development of economic relations with South Africa? They must be acutely aware that they are strengthening South Africa. Indeed, Robert Smith, Deputy Assistant Secretary of State for African Affairs, agreed that this is so in a recent speech on the dilemmas of foreign investment in South Africa.

Unfortunately, doubts inevitably arise. Can it be that the Western countries want to strengthen South Africa in the coming confrontation with liberation forces but find it difficult to state their reasons for this? There are many disturbing signs that this is the trend of thinking.

In a recent discussion in "NATO's Fifteen Nations," Joseph Palmer argued that the definition of NATO's aims needed to be widened.

The aim of NATO, he argued, should be "To ensure the prosperity of the NATO nations." Once such a definition is put forward, and accepted, the issue of southern Africa can become a bottomless pit. For the Western countries can easily be drawn into intervention on the side of the white regimes if they convince themselves of this view. Western economic interests in southern Africa are extensive. And southern Africa may well be the key to Africa.

It is sad to relate that Mr. Palmer drew precisely the most disastrous possible conclusion from his whole argument.

Thus the NATO Alliance must be ready to fight the battle for its survival; not merely in and around Europe, but wherever our interests are jeopardized.

This will mean, in practice, that the Western countries may have to fight on the wrong side in southern Africa where there is a war now going on. There is now an important battle going on for the minds of Western strategic planners. Let us hope that sanity will prevail.

Mr. DIGGS. Thank you, Mr. Gervasi.

Mr. VANDER JAGT.

Mr. VANDER JAGT. Thank you very much, Mr. Chairman.

Mr. Petty, on page 3 you talk about the program that you have for developed countries in relationship to investment. You say:

As with other developed countries, we feel that the principal effect of the program has been to limit U.S. source financing of American direct investment in South Africa rather than the aggregate amount of the investment.

I am not sure I understand that. My problem is, if you are controlling the amount being invested, are you not also at the same time controlling the aggregate amount that is invested?

Mr. PETTY. Congressman, what we are controlling by the direct investment program is the volume of dollar outflows from the United States. So, if a corporation can borrow money in London and put the money in its plan, in this case in South Africa, the dollar outflow from the United States is not influenced but the investment plan is continued.

Mr. VANDER JAGT. Does that not have the effect of having a determinant effect on the aggregate amount that is invested?

Mr. PETTY. I think overall it has tended to dampen direct investment outflows. We have been pretty hard put to quantify it clearly because in the years 1969 and 1968 and 1967 interest rates were very high. If the direct investor also had to borrow at 10 percent in London, that was an added cost factor. There must have been decisions of that type.

Mr. VANDER JAGT. But your testimony is that the program really has very little impact on the aggregate?

Mr. PETTY. Our general feeling is that the aggregate impact of the program was small, admitting that somebody could bring in a case where it might have been the trigger and said, no.

Mr. VANDER JAGT. You estimated, I believe, that our U.S. investment there is something like \$850 million and on page 4 you talk about a return flow of \$78 million in earnings to the United States in 1970.

Isn't that a return of earnings to the United States of about 9 percent?

Mr. PETTY. Here we are going to get into the difficult problem of how you evaluate the capital. In the balance of payments, retained earnings are not built in.

Mr. VANDER JAGT. The U.S. share is estimated to be \$860 million?

Mr. PETTY. This is a measure of the capital outflow that our direct investor has made on the basis of our balance-of-payment statistics.

Mr. VANDER JAGT. You mean if we are estimating what percentage of the total investment the United States has in South Africa, we use one standard and when we are trying to determine the rate of return, we use another?

Mr. PETTY. We are trying to use comparable statistics. The British balance-of-payment statistics, I believe, also are measured in terms of capital outflow which is a measure after all of the balance-of-payments impact upon the exporting country. What we have done is to trace those statistics as to how much money was paid into South Africa.

The question you raise is a different one which is the return on invested capital.

Mr. VANDER JAGT. Well, what is the return on invested capital?

Mr. PETTY. The return on invested capital could depend on whether you include earned surplus as the base upon which you measure your return of capital.

Mr. VANDER JAGT. Then what would it be?

Mr. PETTY. That I will have to try to submit but it would be considerably less, I believe, because, assuming profitable operations over time, that \$860 million should have a capital base in excess of a billion dollars—I just don't have the precise number.

Mr. VANDER JAGT. What is the rate of return if we excluded surplus?

Mr. PETTY. I think your answer is correct, then, the \$78 million over the \$860 million but that may not be the way the corporation looks at it because the corporation may have kept—

Mr. VANDER JAGT. How would you look at it?

Mr. PETTY. Well, it depends what my purpose is. If my purpose is to find out what the balance of payment on capital outflow is, which is the type of return that somebody in my position would be concerned with, I would look at it exactly the way you described. The dividends received on the basis of our capital outflow, I think they would call this the balance-of-payment recoupment which is a different thing than the return on an invested capital that a stockholder would look at because he could build up some capital which might be handled separately.

Mr. VANDER JAGT. Besides \$78 million in earnings which flows into the United States in that year, there would also be earnings retained in South Africa, would there not?

Mr. PETTY. Yes, there would.

Mr. VANDER JAGT. So, at least using my method, the method would be—

Mr. PETTY. Not making allowance for the earned surplus built up over years.

Mr. DIGGS. If the gentleman will yield.

Mr. VANDER JAGT. Gladly.

Mr. DIGGS. Mr. Gervasi seems to be straining to respond.

Mr. VANDER JAGT. Chomping at the bit.

Mr. GERVASI. That needs to be taken account of. It is not the balance-of-payments flow which is the outflow figure to which you are referring which is the return on U.S. investment. In fact, retained earnings are a very much larger figure in most years for South African incorporation.

If you look at the figures, direct invest flows of October, you would see how large those are.

Now, just to give you an idea of how far off one would be if one took balance-of-payment earnings definition as a calculation of what the profitability of American investment is from South Africa, I will give you the actual figures on the rates of return given for South Africa by the Department of Commerce.

In 1963, 20 percent; in 1964, 18.69 percent; in 1965, 19.1 percent; in 1966, 20.6 percent; in 1967, 19.2 percent; in 1968, 17.2 percent.

I would like to make the point that those rates of return are roughly double the average rates of return on American investments overseas.

Mr. VANDER JAGT. Mr. Petty, would you like to look at that and make a comment on it, or is that substantially correct?

Mr. PETTY. No. I am happy to accept that.

This is the ratio of earnings to investment. This gets back to the question, is it balance-of-payment outflow—

Mr. GERVASI. That is usually the Department of Commerce definition.

Mr. PETTY. If I may, Mr. Chairman, I would like to comment upon that subsequently because I think this is the critical variable to evaluate in responding to your question.

Mr. DIGGS. If that is all right with Mr. Vander Jagt, without objection the gentleman will be permitted to make that additional comment for the record.

Mr. VANDER JAGT. Yes.

(The additional comment follows:)

THE FOLLOWING INFORMATION WAS SUPPLIED BY MR. PETTY

The \$860 million figure referred to by Mr. Vander Jagt is the rounded figure for the book value of U.S. direct investment as of the end of 1970. This figure largely reflects cumulative capital outflows from the U.S. plus the U.S. share of cumulative reinvested earnings. During 1970, the U.S. share of earnings (including both remitted and reinvested earnings) was \$141 million and at the beginning of 1970, the book value of U.S. direct investment was \$755 million. Relating the \$141 million to the \$755 million gives a rate of earnings of 18.7 percent in 1970. Remitted earnings plus interest payments by the South African affiliates to their U.S. parents amounted to \$78 million. This represents a 10.3 percent rate of remittance to the U.S. on the book value of the investments as of the beginning of 1970.

Mr. VANDER JAGT. On page 10, Mr. Petty, you talk about this title 19, United States Code, section 1307, and you say, "The statute in essence prohibits the importation into the United States of goods produced by prison labor."

As I recall the statute from yesterday, it was a three-pronged attack. One was prison labor, another was indentured labor, and another was what the statute called forced labor.

Just judging by this sentence on page 10, it would appear to me that you are assuming that all the statute talks about is prison labor.

Mr. PETTY. I think, Mr. Vander Jagt, that provision in the statute also adds, "under penal sanctions."

Mr. VANDER JAGT. When it is talking about indentured labor, but not when it is talking about forced labor as I recall.

Mr. PETTY. I should probably refer to the lawyers on that definition.

Reading a legal contract and not knowing where the comma is, that "under penal sanctions" pertains to all three.

Mr. VANDER JAGT. It seems a rather fundamental point. The reason I am concerned with it is that it is, I understand, your duty to "advise the Secretary on international financial aspects of matters concerning the Tariff Act and related legislation administered by the Treasury Department and by other departments and agencies."

So you would be responsible as I understand it, for advising the Secretary on that particular act, would you not?

Mr. PETTY. Just to give you an organizational aspect of Treasury, the administration of our customs laws and our tariff schedules comes under the Assistant Secretary for Enforcement, Gene Rossides, and I work and am responsible for trade policy, in general.

The administration would be Assistant Secretary Rossides. Regardless, we work closely together.

Mr. VANDER JAGT. But a correct understanding on your part of what that section means would be pretty important in carrying out the function of your job?

Mr. PETTY. I think the Commissioner of Customs would find it especially important, yes, sir.

Mr. VANDER JAGT. It would be to you also, would it not?

It certainly has a tremendous impact on international financial matters. If the statute is not just confined to convict labor, it would have tremendous ramifications in many countries in terms of international finance.

Mr. PETTY. As I say, one of the things I am going to get up, where the comma lies, you are darned right.

Mr. VANDER JAGT. Are you aware of the exception in the statute? After it says, "goods produced by prison labor and/or indentured labor, and/or forced labor cannot be imported," it then says, "except goods produced in the United States where our consumptive demand is not met here in the United States."

Are you familiar with that exception clause?

Mr. PETTY. I am not, no.

Mr. VANDER JAGT. Could you advise us or could you consult with your people as to what goods are coming in today under that exemption clause?

Mr. PETTY. I am not aware, Mr. Vander Jagt, that there has been occasion to interpret that and I would like to be able to give you some official comment on that as well.

Mr. DIGGS. That will be fine.

(The information requested follows:)

INTERPRETATION OF CERTAIN TERMS IN SECTION 307

"Forced labor" is defined in section 307 as "all work or service which is exacted from any person under the menace of any penalty for its nonperformance, and for which the worker does not offer himself voluntarily." A penalty is interpreted to be any punishment other than mere dismissal. Penalties, for instance, may be the loss of the right to engage in some other occupation if the worker ceases the present occupation. Again, if the worker may be fined, imprisoned, or subjected to other forms of corporal punishment if he does not meet production quotas, this would indicate the existence of forced labor.

It is clear from the legislative history of the amendment to the convict labor statute which added the language "forced labor or/and indentured labor under penal sanctions" that the phrase "under penal sanctions" modifies only "indentured labor." Indentured labor under penal sanctions is construed to mean labor performed under contract, written or oral, where penalties are embodied in the contract, if written, or agreed to by the worker orally. Penalties may include one or more of the above punishments described under forced labor. The only practical difference between forced labor and indentured labor, for purposes of the statute, is that indentured labor is performed under color of an employment contract and is superficially voluntary.

No case has arisen under section 307 in which it was necessary to draw a distinction between forced labor and indentured labor because each case which has arisen has involved the use of convict labor. The distinction between the two categories of nonconvict labor therefore remains undecided and, at this point, of theoretical interest only.

Section 307 includes an exemption permitting the importation of goods, wares, articles, or merchandise produced with the use of forced or indentured labor "which are not mined, produced, or manufactured in such quantities in the United States as to meet the consumptive demands of the United States." No case has arisen and no finding has been made which involves only the use of forced or/and indentured labor and as a result the exemption clause has never been applied. Consequently, no foreign goods are presently entering the United States under the exemption clause.

Mr. VANDER JAGT. Is it because you just assume the statute is only talking about prison labor, that therefore, you don't even have to look

at the exemption clause? Is that why it is an important exemption, or why knowing what it means is important?

Mr. PETTY. I am not prepared with that particular point and would like to file a comment if I may, Mr. Chairman.

I am advised from our Customs Bureau that that issue has not come up for questioning but I would like to see why it has not and what it was.

Mr. DIGGS. Just to enlarge upon it and to get the following because I think that Mr. Vander Jagt raised a very cogent point, we would like to formally request that the Treasury Department provide us with a listing of all of the goods being imported into the United States from South Africa.

(List of imports into the United States from South Africa is retained in the subcommittee files.)

We would like them to provide us with a finding specifically as to which of these goods are produced by (1) convict labor, (2) indentured labor, and (3) forced labor.¹

We would also like the application of 19 U.S.C. 1307 in each case.²

Finally, we would like to know the action which the Government is taking to enforce the statute with respect to each and all goods being imported into South Africa.³

Could we get that information that will cover all this?

Mr. VANDER JAGT. I think that covers it, Mr. Chairman, with just one other additional point that I would like to pursue with Mr. Petty.

You tell us, Mr. Petty, that there was one case involving South Africa that has come up and that it has been promptly resolved to the satisfaction of Treasury and other officials. We had testimony here yesterday that there is a whole drawer full of applications that have come up under this statute and that the drawer in the file is considered classified.

Now, can you enlighten us on that?

Mr. PETTY. I am not aware of that but I would like to follow up and report to the committee, Mr. Vander Jagt.

Mr. VANDER JAGT. If we could add that to the list, that would be very helpful to us.

Mr. PETTY. I will be happy to.

Mr. DIGGS. The gentleman will be asked to supply the information as requested.

(The information requested follows:)

MEMORANDUM

Subject: Enforcement of Section 307, Tariff Act of 1930 (19 U.S.C. 1307).

DECIDUOUS FRUIT FROM SOUTH AFRICA

The Bureau of Customs, Department of the Treasury, which administers the provisions of the subject law, has received no complaint, allegation, or information concerning the use of convict labor, forced labor, or indentured labor under penal sanctions in the mining, manufacture, or production of any class of merchandise exported to the United States from the Republic of South Africa, with the exception of a complaint about the use of convict labor in certain cases involving exportations from South African deciduous fruit farms.

¹ As of this date, no satisfactory reply has been received from the Department of the Treasury. It is hoped that the Department will supply the information requested which will then appear in Part III of these hearings.

² Ibid.

³ No direct reply has been received to the question. Given the inadequate response to the previous two questions (as indicated in footnotes 1 and 2), it must be assumed that no action is being taken on this request by the Department.

The fact of the use of convict labor on some of those South African farms was established in 1966, together with evidence that products of such farms were being exported to the United States, as well as products of deciduous fruit farms which employed no convict labor. The South African Deciduous Fruit Board promptly thereafter concluded arrangements to assure that only products from farms not employing convict labor would be shipped to the United States market.

The Board agreed to phase out employment of convicts and, pending completion of the phasing out, to assign a code number to each registered farm employing non-convict workers exclusively, the assigned code to be applied to the farm's containers of fruit products prepared for shipment to the United States. Each export shipment was supported by the Board's certificate verifying that convict labor was not used in any capacity.

The Bureau of Customs, following receipt of confirming data submitted by the American Consulate General, approved reliance on the Board's procedures as evidence that South African deciduous fruit products imported into the United States under the Board's certification are not prohibited from entry under section 307. Appropriate instructions dated March 2, 1966, copy attached, were issued to Customs officers at ports of entry. This action made it unnecessary to make and publish a finding under the Customs regulations (19 CFR 12.42-12.44) to require the exclusion from entry of South African deciduous fruit products under the authority of section 307. A copy of the regulations is also attached.

The 1966 instruction continues in effect based on current information submitted through the Department of State, which while reflecting steady progress in the program to phase out the use of convict labor on deciduous fruit farms of South Africa, has confirmed some remaining use on a limited number of uncoded farms.

PENDING MATTERS

The files of the Bureau of Customs dealing with matters arising under section 307 are in the custody of the Restricted Merchandise Branch, Division of Entry Procedures and Penalties. The immediate custodian is Paul K. McCarthy, Chief of the Branch. That office does not have "a whole drawer full of applications" as stated in the hearings and there are no such applications on hand which have not been acted upon, although three cases involving products from countries other than South Africa remain under investigation.

Mr. VANDER JAGT. I have no further questions of either witness, Mr. Chairman.

Thank you.

Mr. PETTY. If I may clarify one point, I think some aspects of the chairman's question are more readily attainable than others are in terms of time and the nature of the information. I make that observation.

If I understand your second point relating to a determination as to what type of labor was involved on the particular goods imported involves a judgment on the labor conditions of a particular plant in a particular city 10,000 miles from here, that information I think you will quickly agree is not as clearly available as it is and may not be available at all.

Mr. DIGGS. Well, the request still stands. Of course that is the responsibility of Treasury for being responsive to the subcommittee request.

I should think that Treasury would have access to this information even through our embassy, either through sending somebody out there just like the Department of Labor is sending some one out there in a couple of weeks, NASA just got through sending someone out there in connection with certain other questions raised by this committee and several other agencies.

As I pointed out to Labor yesterday, I would expect that the South African Government ought to be cooperative in providing basic in-

formation and, if not, we ought to know that, too, because I am sure that you provide your counterparts in the South African Government with certain information and, if they are going to be uncooperative, then I think that there ought to be some consideration of quid pro quo.

So, I don't know what context you are putting this in but, from where I sit, I would like to see the Department make a serious effort to get this on the assumption that it is obtainable and that you are going to provide it.

Mr. PETTY. We will certainly do that, Mr. Chairman.

Mr. VANDER JAGT. Mr. Chairman, if I could just interject. If it would be of any assistance in the search, the testimony yesterday relative to the applications under title 19, United States Code, section 1307, was that this file drawer filled with applications was in the Bureau of Customs, in the office of a Mr. Paul McCarthy.

Mr. PETTY. Thank you.

Mr. VANDER JAGT. You're welcome.

Mr. DIGGS. Turning to the international financial agencies, Mr. Secretary, the committee is interested in getting a complete picture of loans and grants by international agencies to South Africa over the past 5 years. Particularly we want to know what loans or grants have been made to the South African Central Government and public authorities in South Africa, or in Namibia. Public authorities include the Industrial Development Corporation, the agency known as ESCOM, the Electricity Supply Commission, the agency whose initials are ISCOR, and so on.

That is nationalized industries.

Now, we know that you didn't come prepared to give full documentation for the record on such a question but I would like to get some reply from you with respect to the implications of this request.⁴

Mr. PETTY. I would be happy to.

At the present time, the World Bank has not made any loans to South Africa since 1966 and the present outstanding amount on those loans is now, I believe, about \$2 million.

South Africa is able to generate its own capital and, as a matter of fact, South Africa is now a donor to the World Bank group, a small donor, and we are concentrating on the World Bank's lending to the other parts of Africa. I will be glad to provide the details on those loans.⁵

Mr. DIGGS. Mr. Gervasi, we noted in your U.N. publication on "Industrialization, Foreign Capital and Forced Labor in South Africa" a reference to loans and grants by international agencies to South Africa. Would you want to make any comments on this same question?

Mr. GERVASI. Yes, sir. You are referring to table C-9.

Mr. DIGGS. Right.

Mr. GERVASI. This is a very puzzling table. It indicates that the South African Central Government has been receiving very substantial long-term loans in recent years. It lists two lines; one, Unrequited

⁴As of this date, no satisfactory reply has been received from the Department of the Treasury. It is hoped that the Department will supply the information requested which will then appear in Part III of these hearings.

⁵It should be noted that all of the information and statistics supplied by the Department of the Treasury purportedly in answer to this question specifically excluded Rhodesia and South Africa. The information submitted by the Department is retained in the subcommittee's files.

Transfers Received by Central Government of which intergovernmental transfers constituted, say, a half, or something like that.

Now, it has not been possible really to discover what this means precisely. No information has been forthcoming on these matters and the possibility seems to exist at least from any normal interpretation of these lines that the South African Central Government is receiving on the order of, well, \$75, \$80, or \$100 million a year in some manner or other that we don't quite understand. These are flows across the balance of payments.

Mr. DIGGS. Would you care to make any comments, or one of your colleagues, Mr. Petty, on that?

Mr. PETTY. The source is the IMF Balance of Payments Yearbook, 1969; and I think that would permit us to go to the IMF and try to get some of the information that makes up these statistics.

Mr. DIGGS. Well, without objection the table is inserted in the record at this point following which, room will be left for comments from the Treasury Department at a later time.

(The table and comments referred to follow:)

TABLE C-9 J.—SOUTH AFRICA: LONG-TERM LOANS RECEIVED BY CENTRAL GOVERNMENT
[In millions of rands]

	1964	1965	1966	1967	1968
Drawings from—					
Germany.....		7	7		
Italy.....		7		7	7
Luxembourg.....		7			
Switzerland.....					8
United States: Private banks.....		27	3		
Other lenders.....		8			14
Total.....		56	10	7	29
Unrequited transfers received by central government.....	29	31	43	54	68
Of which intragovernmental transfers.....	14	16	25	29	32

¹ "Industrialization, Foreign Capital and Forced Labour in South Africa" by Sean Gervasi, United Nations, Unit on Apartheid, Department of Political and Security Council Affairs, New York, 1970.

Source: IMF balance-of-payments yearbook, November 1969.

COMMENT FROM TREASURY DEPARTMENT

The IMF Balance of Payments Yearbook, Volume 21, November 1969, is cited as the source of Table C-9 referred to above. The notes to the South African Tables in that publication state in an introductory paragraph; "The data cover transactions of the Republic of South Africa, of the territory of South West Africa, and of Botswana, Lesotho, and Swaziland.

Note 10 of the Tables indicates that "Unrequited transfers: central government" covers intergovernmental transfers and taxes withheld for payment to the South African Government on investment income paid to foreign residents. Balance of Payments accounting practice utilized in the IMF Yearbook shows first the gross outflow of "investment income" (Note N, Table C) and later the recoupment of taxes on such income as "unrequited transfers: central government." Approximately half the total in each year shown in Table C-9 is tax on investment income.

With respect to intergovernmental transfers, the South African Reserve Bank publication, "A statistical presentation of South Africa's balance of payments for the period 1946 to 1970" notes on p. 3, with respect to the disaggregation of Botswana, Lesotho and Swaziland from the consolidated data, "as far as international transfers are concerned the governments of the BLS—countries receive large foreign aid payments from the United Kingdom and this necessitated considerable adjustments to government transfer receipts." No further information is available on this subject, but information recorded by the Development

Assistance Committee of the OECD and official British statistics are in accord with the statement of the South African Reserve Bank, quoted above. Furthermore, a subsequent volume of the IMF Balance of Payments Yearbook which now excludes the BLS countries from the South African statistics has no entry whatever for "intergovernmental transfers received" from which it could be inferred that these transfers were received entirely by Botswana, Lesotho and Swaziland.

Mr. DIGGS. Is there any trend here that either one of you would care to comment on about these loans and grants from these international agencies?

Mr. GERVASI seems to be quite puzzled by this whole matter. What are some of the questions that come into your mind as you look at these kinds of figures? Does it seem to suggest several possibilities?

Mr. GERVASI. Well, sir, there are many press reports of loans negotiated between various European Governments and agencies of the South African Government and, yet, we cannot always trace the hard details of these in any published official sources.

It is known, for instance, that the French Government has lent substantial amounts of money to various public agencies, public authorities of the South African Government often in the form of trade credits. Now, if we can't find these figures easily in official sources, then, of course, the question arises whether there are any other such loans which may have been tucked away in some corner, which makes it difficult for us to understand their real import; that is to say, that they are intergovernmental transfers to the Central Government of South Africa or some of its agencies.

So I think—judging not from official statistics of any kind but from press reports—one would imagine that there is a very substantial growth in these transactions.

Mr. DIGGS. Let's turn a minute to a very important item involving South Africa and that is gold. Would South Africa be a beneficiary if the dollar is devalued and the price of gold rises?

Mr. PERRY. They would be able to write up their gold reserves to the extent they have them.

What it would do to the private price, Mr. Chairman, and the private sales of South African gold involves the market forecast of a commodity sometime in the future and that has traditionally proved pretty hazardous.

If South Africa now sells a billion dollars worth of gold on the private market at \$43 and if the official gold price is moved up 5, 7, or 10 percent, one can only guess what impact that would have upon the private price.

Those who have been private holders who have been expecting a larger increase, would it be one of disappointment in causing the \$43 price to drop to \$39 or would it be one of expectation and say, "Well, the next time around it would go higher?"

I don't make that forecast. Generally it would seem to serve to reduce the expectation to the private holders, and whether or not South Africa would then be able to realize more in the private sales, it is just hard to say.

Mr. DIGGS. Well, what was the reason that we put a floor under gold in terms of our own interests and why did you make this agreement?

Mr. PETTY. Well, this involved not just the judgment of the United States but the other members of the monetary system and the other

central bankers. If other central bankers have 80 percent of their country's reserves in gold and they wake up in the morning and see the trading at \$32, the implication would be that their reserve is overvalued and they have to mark down the value of their reserves, which is a position into which the central bankers would not want to be put.

It would not serve to perpetuate stability in the system, it would be basically a destabilizing thing. It was not our purpose to add to the instability, nor was it our expectation as a practical matter that it would go down very far.

Mr. DIGGS. But it was considerable benefit, was it not, to South Africa?

Mr. PETTY. I would not come to that conclusion, no. I would think that the likelihood of the gold price having been anything more than a touch below \$35 was minor and if measured against the uncertainty that lack of agreement would add to the system, it was the system generally that benefited—not South Africa or any other country in particular.

Mr. DIGGS. How much gold did we purchase from South Africa this year? How much last year?

Mr. PETTY. The United States has not purchased any.

Mr. DIGGS. Who is buying South African gold?

Mr. PETTY. Well, the vast majority of the South African market goes to the private market which is channeled through Zurich and London and there are various private holders and industrial users. With the exception of what I referred to in my testimony, it did not go into official holdings. The private holders are in many countries, excluding the United States, around the world where private individuals retain the right to hold gold. Industrial consumers increasingly demand gold because of its use in components in high technology, electronics, space stuff, and things of that type where the demand over the years has been increasing.

Mr. DIGGS. I yield to counsel at this point.

Mrs. BUTCHER. Mr. Petty, you said that there are official sales of gold by the South African Government or public sales of gold?

Mr. PETTY. Yes. Well, they sell it, the official sale or official purchasers?

Mrs. BUTCHER. Yes.

Mr. PETTY. Through the International Monetary Fund, as I mentioned in my testimony, which is their outlet for official sales.

Mrs. BUTCHER. With respect to those sales, what would be your estimate of the benefit to South Africa should there be a 6 percent rise?

Mr. PETTY. First, to the extent that they sell to the IMF at \$35 and the private price is \$40, therefore giving a profit to selling to the private market.

Your question gets back, I guess, as to what would happen to the private gold price if there were a change in the official price and I don't really know. It is not a market that is governed by normal supply and demand factors the way a ton of wheat is, the way copper prices are. It has developed over the years a special image and highly speculative demand.

Now you are asking me to predict what speculative demand would be triggered by a change and I frankly don't know.

Mrs. BUTCHER. On the question as to users of South African gold, could you present documentation on that—you said there were various industrial users and so forth—so that we could have it for the record?

Mr. PETTY. I can give you some estimates on that, yes, indeed.

Mrs. BUTCHER. Thank you.

(The information requested follows:)

The only precise data on the use of gold that is available to us is that with respect to users in the United States who operate under license of the Treasury Department.

For the year 1970, the latest for which a compilation is available, U.S. users of gold used 5,973,000 ounces. This amount may be broken down into the following types of use:

	<i>(Thousands of fine ounces)</i>
Jewelry and artistic.....	3,340
Dental	658
Industrial (including space and defense).....	1,975
Total	5,973

The source of acquisition of the gold during 1970 may also be broken down as follows:

	<i>(In thousands of ounces)</i>
From U.S. smelters and refiners.....	1,943
Imports	4,030

From:

Canada	2,972
Switzerland	731
United Kingdom.....	193
Other	173

The gold obtained in the U.S. and that from Canada represents primarily new production in these two countries. South Africa sells its newly mined gold through bullion dealers, primarily in Switzerland and London, and since it is the principal supplier to these markets, it is likely that some of the gold imported from these countries was of original South African origin. (Preliminary data for 1971 indicates U.S. purchases in Europe were greater than in 1970.)

It might be noted, however, that because South Africa is by far the largest gold producer and supplier to world markets, that to the extent anyone buys gold and thus helps to sustain the world price, South Africa benefits. Whether an individual purchase involves South African gold or not is irrelevant from the broader economic viewpoint.

Although no firm figures are available, it has been established that U.S. use of gold comprises perhaps one-fifth to one-fourth of total world industrial users (including that for jewelry, artistic and dental uses). If so, this would mean that around 18 to 24 million ounces are purchased by industrial users outside the United States. Since U.S. and Canadian gold production is consumed almost entirely by the U.S. and Canada, this would mean other purchasers deal primarily in the European markets of which South Africa is the principal supplier.

The attached excerpt and table from the 1971 Annual Report of the International Monetary Fund provides additional information on the private absorption of gold.

“1971 IMF ANNUAL REPORT” WASHINGTON, D.C., SEPTEMBER, 1971

PRIVATE ABSORPTION

Private net absorption of gold for industrial and artistic use and to meet hoarding demand during 1970 was, at 33.6 million ounces, the equivalent of \$1,175 million at \$35 a fine ounce, the smallest amount since 1964. In 1969 private net absorption was estimated at 37.6 million ounces, while in the two previous years of intense demand for gold, private net absorption of gold totaled 144.8 million ounces (\$5,069 million).

Estimates have been made of the amount of gold absorbed for industrial and artistic use. As was pointed out in the *Annual Report, 1970*, the estimates are subject to a considerable margin of error, and the distinction between the use

of gold for industrial and artistic purposes and for private hoarding is blurred. The estimates for industrial and artistic use of gold, shown in column C of Table 41, have been revised from those shown in last year's Annual Report. The revised estimates show a slightly larger amount of gold used for industrial and artistic uses than was shown formerly. For 1970 the estimated consumption of gold amounted to 67 percent of world output and 83 percent of the total supply of gold placed on the market in that year.

TABLE 41.—GOLD: MARKETED STOCKS AND DISTRIBUTION BY USE, 1958—1ST QUARTER 1971

[In millions of U.S. dollars at US\$35 a fine ounce]

Year	Newly available gold ¹	Additions to world monetary stocks ²	Estimated industrial and artistic use ³	Estimated private hoarding ⁴
	(A)	(B)	(C)	(D)
1958.....	1,261	680	350	221
1959.....	1,382	750	380	252
1960.....	1,378	280	430	568
1961.....	1,490	695	470	415
1962.....	1,500	370	510	620
1963.....	1,906	820	540	546
1964.....	1,856	710	600	546
1965.....	1,840	220	715	905
1966.....	1,371	-45	780	636
1967.....	1,401	-1,580	850	2,131
1968.....	1,388	-700	860	1,228
1969.....	1,408	110	915	383
1970.....	1,450	275	975	200
1971, 1st quarter.....	355	-35	290	100

¹ New production (excluding output of CMEA countries, mainland China, etc.) plus sales by the U.S.S.R. less purchases by mainland China.

² Data from International Financial Statistics.

³ Fund staff estimates.

⁴ The residual amount. Cols. A—(B+C)=D.

The revisions have been based on more detailed estimates for a larger number of countries submitted to the Fund. They cover 80 countries, of which 45 submitted information during 1970. When such information was not available to the Fund, the estimates were taken from the U.S. Bureau of the Mint series on private and industrial consumption of gold. Information is not available for all countries for the whole period; for those years for which data are lacking, the available data for each country were regressed on the statistics of real or money gross national product. Estimates have been made for almost all the large industrial countries, but little information is available for some of the larger primary producing countries. For the latter, estimates have been based on statistics of bullion exports recorded by other countries.

Industrial and artistic consumption of gold in 1970 is estimated at about \$975 million, compared with a revised estimate of \$915 million in 1969. The rate of growth of demand in 1970 is put at between 6 and 7 per cent, compared with an average annual rate of growth of about 9 per cent over the last decade. As noted earlier, the lower rate of growth of demand for industrial and artistic use during 1970 was due in large part to the decline, equivalent to about 20 per cent, in demand in the United States, which is the largest single consumer of gold and which normally accounts for about one fourth of total estimated consumption. The rate of growth of demand also fell in Switzerland and, to a lesser extent, the United Kingdom. However, demand for gold from the traditional hoarding countries of the Middle and Far East increased substantially. During the first quarter of 1971 the rate of growth of demand for gold for industrial and artistic use increased, particularly in North America where stocks were rebuilt.

The decline in gold consumption in some of the main industrial countries during 1970 can be attributed partly to the slowdown in their overall economic activity, particularly in the United States. In some countries the slowdown was associated with a decline in the aerospace and defense industries, which are substantial users of gold; further, the decrease in the rate of growth of real disposable income importantly affected the demand for gold jewelry in a number of countries. In a relatively large number of countries, especially in Western Europe, consumer demand for gold was satisfied by running down private stocks, which had been built up in previous years.

Other private holders of gold, particularly in Western Europe, tended to be net sellers during 1970, and it is likely that private stocks in the main industrial countries are now smaller than at any time since the gold crisis of late 1967 and early 1968. The speculative overhang of gold that was built up at that time, estimated at about the equivalent of \$3 billion, would seem to have been largely worked off in meeting consumer demand and the demands of the traditional hoarding markets in the countries of the Middle and Far East.

While there was a slowdown in the rate of growth of demand for gold for industrial and artistic use during 1970, the decline in the total amount privately absorbed resulted from a continued fall in net hoarding demand, especially in the main industrial countries. In the estimates of private absorption shown in Table 41, private hoarding is a residual, calculated by deducting estimated industrial and artistic demand from the net supply of gold placed on the private markets. For 1970, hoarding demand is estimated at the equivalent of \$200 million, compared with estimated new hoarding of \$383 million in 1969. This was the smallest estimated volume of gold absorbed into private hoards since the mid-1950's. During the first quarter of 1971, however, estimated private hoarding demand increased relatively sharply.

Mrs. BUTCHER. Yesterday there was testimony on the effect of U.S. labor interests of the cheap labor in South Africa and the products of that labor going into export markets in Europe and in Africa.

Now, this question also pertains to Treasury because I am sure that there are implications and effects on U.S. balance of trade interests, because of the use of South Africa as a base to produce goods to go into African markets and European markets, where formerly those products were sold from the United States.

Mr. PETTY. Well, of course, you are raising a question there that could be just as relevant to the competitiveness of any overseas market where the wage rate is less than prevailing in the United States and the proficiency of their manufacturing process or through a preferential trading arrangement gives them special market access.

Now, I am sure the wage rate of South Africa is less than the United States. Offhand I don't know what the statistics are. Whether that is compensated in the United States by the efficiency of our industrial plant would be an assessment required for me to properly answer your question.

Mrs. BUTCHER. What I have in mind is the presentation of an analysis of the implications of the labor system in South Africa on our balance of trade situation. Specifically that analysis would include: (1) an analysis of what markets we sell to in Europe and in Africa—

Mr. PETTY. And that are competitive with exports of South Africa?

Mrs. BUTCHER. No; just the markets we sell to and then an analysis of what specific products are sold in those markets, an analysis of the extent of penetration of those same markets by goods manufactured in South Africa, and an analysis of those U.S. multinational corporations using South Africa as a base for exports to other countries in Africa and to European markets.⁶

Then we would get to the point where we could look at them to get the analysis of the balance of trade and other implications.

Mr. PETTY. Yes.

Mrs. BUTCHER. We could send you a copy of this article which we showed to Labor yesterday, which just indicates some of the type of problems which give rise to this kind of question.

⁶ As of this date, no satisfactory reply has been received from the Department of the Treasury. It is hoped that the Department will supply the information requested which will then appear in Part III of these hearings.

Mr. DIGGS. Mr. Secretary, it takes response to questions like that in order to really understand the involvement of the United States. This is what this subcommittee is undertaking to study.

Mr. PETTY. I would be happy to accept the article and accept the assignment.

Mr. DIGGS. In these various exchanges we have had agencies—

Mr. PETTY. What I was reflecting upon was the cause and effect in balance-of-payments analysis. We have been doing quite a bit of work on this on what is the effect on U.S. exports and U.S. jobs and U.S. direct investment and it is an assignment I eagerly accept.

The reliability of the conclusions I express a little pause about, but I would be happy to work on it.

(The following information was supplied:)

With respect to the points raised in preceding paragraphs, the latest available data, published by the Commerce Department (*U.S. Direct Investments Abroad—1966*), suggest that the average payroll cost per employee of U.S. manufacturing affiliates located in South Africa was \$2,133 in 1966. This compares with \$1,077 for the rest of Africa and \$3,501 for Europe.

Very little comprehensive data is available concerning the activities of U.S. multinational corporations in general, let alone data for individual countries. The publication cited above gives data for South Africa in only some cases. The manufacturing affiliates sourced only 20 percent (\$22 million) of their funds from the U.S. in 1966. In 1970, manufacturing industries comprised 50 percent of the \$864 million book-value of U.S. direct investments in South Africa.

American firms, subsidiaries and affiliates undertake a variety of activities in South Africa. The Commerce Department's *Trade List—South Africa* provides a detailed list of these activities, but the relative importance of different undertakings cannot be ascertained.

As I am sure you are aware, analyzing the net effects of multinational corporations on the balance of payments and the economy in general is tenuous at best. We have not attempted to focus on the activities of multinational corporations in specific countries and their resulting balance of payments effects. The impact of direct investment abroad on U.S. exports and U.S. employment has not at this point been clearly identified. As we cannot tell what would have happened to our exports and domestic employment had a particular investment by a U.S. firm not occurred, the question is virtually impossible to answer.

Mrs. BUTCHER. Mr. Chairman, Mr. Gervasi has discussed in his treatise on "Industrialization, Foreign Capital, and Forced Labor in South Africa", in parts 3 and 4, I believe, the questions involving the foreign economic situation and its implications.⁷

Mrs. BUTCHER. Mr. Petty, in one of the pages of your testimony you refer to the net outflow of capital to South Africa as being \$6 million. Is the figure of \$59 million ever given?

Mr. PETTY. I think mine is a direct investment figure which would not include certain other types of capital flows, but let me see.

Mr. VANDER JAGT. Page 4.

Mr. PETTY. I am trying to see where this \$59 figure comes from.

Mrs. BUTCHER. It is on page 4 of your testimony.

Mr. PETTY. I am sorry, could you restate your question?

Mrs. BUTCHER. You give the figure of \$6 million as the one for the net outflow to South Africa of new capital and I was wondering if that was an all-inclusive figure?

Mr. PETTY. That is strictly direct investment at the net figure which does not include bank loans for example, would not include private

⁷ See page 401 of the Appendix for this treatise.

remittances and it would not be netted against dividend income or royalty income.

Maybe it would be helpful if I try to provide the total bilateral capital flows including direct investment.

Mrs. BUTCHER. The total annual U.S. investment into South Africa for this year and, say, back over the past 10 years so we can get a picture of the trend.

Mr. PETTY. I would be happy to.⁸

Mrs. BUTCHER. Mr. Gervasi.

Mr. GERVASI. Yes, it would be particularly valuable to know about one thing. The figure that you give is a figure for new net capital outflow but that does not give a full picture of the American contribution to South African industrial growth for this reason: that a very much larger sum usually is invested in South Africa directly by American corporations in the form of retained earnings and this figure is very substantial in many years.

So a proper measure of the contribution of American corporations to domestic capital formation itself in South Africa would have to take into account not only direct flows into South Africa but would also have to take into account direct investment from retained earnings.

Mr. PETTY. That is certainly part of the figure in South Africa.

Mrs. BUTCHER. There are certain things here that we would like in connection with the U.S. flows to South Africa.

The first is the 10-year flow breaking this down into net capital outflow and reinvestment earnings.

Next, what were the gross capital flows to South Africa from the United States in each of these years?⁹

What were the gross flows to each sector of the economy?¹⁰

I believe I mentioned—

Mr. PETTY. Public and private? In the public sector and the private sector?

Mrs. BUTCHER. Yes, and in the mining, manufacturing, and other sectors.

Mr. PETTY. We will probe as far as we can.

Mrs. BUTCHER. We are trying to get a picture of where U.S. money is going into South Africa, how much is going and in what form.

Also, what proportion of total assets in each sector of the South African economy is owned or controlled by U.S. corporations or by corporations in which U.S. firms have a majority interest?¹¹

Mr. PETTY. I will be happy to provide that to the extent we can develop the information.

(The information requested follows:)

⁸ Available information is consolidated in the table on page 205.

⁹ As of this date, no satisfactory reply has been received from the Department of the Treasury. It is hoped that the Department will supply the information requested which will then appear in Part III of these hearings.

¹⁰ Ibid.

¹¹ Ibid.

DATA ON U.S. DIRECT INVESTMENT IN THE REPUBLIC OF SOUTH AFRICA (INCLUDING NAMIBIA) 1960 TO 1970

[In millions of U.S. dollars]

	Net capital out-flows	Rein-vested earnings	Income				Fees and royalties ¹	Book value	Total earnings	Percent rate of return ²
			Total	Divi-dends	Branch profit	In-terest				
1970 total ³	44	52	78	74	2	3	25	864	141	18
Mining and smelting ³	9	(2)	35	33	2	-----	1	90	39	46
Petroleum ³	5	10	8	14	(7)	(4)	3	172	19	12
Manufacturing ³	22	30	26	20	5	2	17	438	58	16
Other ³	8	14	9	7	2	1	4	164	25	18
1969 total.....	6	49	69	65	2	3	19	755	127	18
Mining and smelting.....	1	1	30	30	(1)	-----	1	84	36	44
Petroleum.....	8	7	13	18	(5)	(4)	2	158	23	16
Manufacturing.....	1	31	17	11	4	2	12	373	48	14
Other.....	(4)	10	9	6	3	1	4	140	20	15
1968 total.....	6	26	74	69	3	1	16	696	111	17
Mining and smelting.....	(14)	(7)	32	32	(1)	-----	1	81	31	31
Petroleum.....	5	5	15	17	(2)	(4)	1	148	23	17
Manufacturing.....	15	16	19	16	-----	1	10	333	37	12
Other.....	-----	12	8	4	-----	(4)	3	134	20	16
1967 total.....	35	36	80	75	3	1	16	666	126	21
Mining and smelting.....	15	10	29	30	(1)	(4)	1	99	45	62
Petroleum.....	(2)	6	14	14	(4)	(4)	2	139	23	17
Manufacturing.....	25	11	29	27	2	1	10	304	44	16
Other.....	(3)	9	8	5	3	(4)	3	124	17	14
1966 total.....	17	48	71	65	5	1	14	597	124	23
Mining and smelting.....	(4)	9	3	33	(4)	(4)	1	73	45	69
Petroleum.....	(4)	9	11	11	-----	-----	2	135	21	17
Manufacturing.....	14	17	22	18	3	1	9	271	40	17
Other.....	4	12	5	3	2	(4)	2	118	18	18
1965 total.....	30	18	78	73	5	(4)	13	529	101	22
Mining and smelting.....	1	(4)	35	35	-----	-----	1	65	34	50
Petroleum.....	4	(1)	17	17	-----	(4)	2	126	18	15
Manufacturing.....	21	17	20	17	3	(4)	9	237	38	20
Other.....	4	5	6	4	2	(4)	2	101	11	13
1964 total.....	17	38	46	41	4	(4)	10	467	87	21
Mining and smelting.....	1	4	15	15	-----	-----	1	68	20	32
Petroleum.....	(1)	6	10	10	-----	-----	2	123	17	14
Manufacturing.....	5	29	12	10	2	-----	6	193	41	26
Other.....	12	(4)	9	6	2	-----	1	83	9	13
1963 total.....	12	39	40	37	3	(4)	8	411	82	23
Mining and smelting.....	(1)	2	10	10	-----	-----	1	63	13	21
Petroleum.....	2	9	8	8	-----	-----	2	118	17	16
Manufacturing.....	6	21	19	18	1	-----	4	158	41	32
Other.....	5	7	3	1	2	-----	1	72	11	18
1962 total.....	8	39	33	29	3	(4)	6	357	72	23
Mining and smelting.....	4	6	9	9	-----	-----	1	61	15	29
Petroleum.....	(3)	19	-----	-----	-----	-----	1	107	19	20
Manufacturing.....	7	10	20	19	1	-----	4	129	31	28
Other.....	5	4	4	1	2	-----	1	60	7	14

See footnotes at end of table.

DATA ON U.S. DIRECT INVESTMENT IN THE REPUBLIC OF SOUTH AFRICA (INCLUDING NAMIBIA) 1960
TO 1970—Continued

[In millions of U.S. dollars]

	Net capital out- flows	Rein- vested earn- ings	Income			Fees and royal- ties ¹	Book value	Total earn- ings	Percent rate of return ²	
			Total	Divi- dends	Branch profit					In- terest
1961 total.....	(4)	21	39	35	4	(4)	6	311	61	21
Mining and smelting.....	3	3	10	10	-----	1	52	13	28	
Petroleum.....	(2)	12	4	4	-----	2	96	16	19	
Manufacturing.....	(2)	2	21	19	1	3	112	23	21	
Other.....	1	4	4	2	3	(4)	51	9	20	
1960 total.....	(18)	17	34	32	1	1	5	286	50	(5)
Mining and smelting.....	(6)	1	16	16	-----	(4)	(4)	46	17	(5)
Petroleum.....	(8)	10	(4)	(4)	-----	2	86	10	(5)	
Manufacturing.....	(5)	4	15	14	1	(6)	3	108	19	(5)
Other.....	1	2	3	2	(4)	(4)	(4)	46	4	(5)

¹ Fees and royalties exclude film and television tape rentals.

² Rate of return = $\frac{\text{total earnings in current year}}{\text{book value at end of previous year}}$.

³ 1970 data are preliminary.

⁴ Less than \$500,000.

⁵ Not applicable.

Note: Figures may not add due to rounding.

Source: Office of Business Economics, Department of Commerce.

NOTES

1. Data on capital flows are collected only on a "net" basis by this office. Therefore, information on gross capital flows is not available.

2. Reinvested earnings are tabulated only for incorporated foreign affiliates. Earnings of branches that are reinvested are included in capital outflows. This office makes no distinction between "reinvested" and "retained" earnings.

3. OBE has no available information on the proportion of total assets in South Africa which is owned or controlled by U.S. investors.

4. Total income as shown is the sum of dividends, branch earnings, and interest paid to U.S. owners. Royalties and fees are shown separately and do not include fees from foreign film and television tape rentals which are not available in country detail.

5. The rates of return are computed by dividing the current years' earnings (branch and corporate) by the book value at the end of the previous year.

Mrs. BUTCHER. What kind of controls has Treasury on the export of U.S. capital to South Africa now and perhaps over the past few years?

Mr. PETTY. Well, the direct investment program which is administered by the Department of Commerce limits direct investment outflows. The interest equalization tax which is administered by Treasury taxes portfolio flows, and the definition of a portfolio is an equity investment where the investor holds less than 10 percent.

I think those are the two programs.

Mrs. BUTCHER. Mr. Petty, when you are submitting the answers for the questions involving South Africa, will you consider that they include any outflows or investment or business involvement in Namibia as well?

Mr. PETTY. I will indeed.

Mrs. BUTCHER. Thank you.

Do South African figures for net capital inflows include reinvested earnings?

I would like Mr. Gervasi also to comment.

Mr. GERVASI. It seems to me doubtful but we are not clear. I think they are balance-of-payment figures.

Mr. PETTY. That is the point. The statistics are normally provided for balance-of-payments purposes. That information is not relevant for those purposes, it is relevant for other considerations, and I just am not familiar with the statistical collection system in South Africa to answer your question.

Mr. GERVASI. What that means, of course, is when the South African Government generally tends to make its statements about dependence on foreign capital in terms of balance-of-payments figures. This is not a reflection of the real contribution that other countries are making in South Africa. It is not a significant reflection of the facts.

Mr. PETTY. It is certainly not the sole index.

Mr. GERVASI. Yes. So, they tend to understate it and I think that perhaps you may have understated it a bit yourself when you just used the net capital outflow figure in saying that South Africa generates enough of its own capital.

I think the general impression among economists is that South Africa does not generate enough of its own capital, in fact that it is critically dependent upon other countries for capital.

Mr. PETTY. I am sure the inflows have been highly beneficial to the South African economy.

Mrs. BUTCHER. The portfolio capital?

Mr. PETTY. Yes.

Mrs. BUTCHER. On page 4 you say you are dealing only with the direct capital inflows but your figures show that in 1970 it was to \$44 million, which is a significant increase over that of \$6 million.

Could you comment on this?¹²

Mr. PETTY. Offhand I don't know the particulars of that but if there was a particular direct investment that was booked over a particular calendar year, you get a surge in the investment statistics. I don't have the background for the individual investments that are involved on this.

Mrs. BUTCHER. Would it be possible for Treasury to look into this because this is a dramatic increase.

Mr. PETTY. I think—

Mrs. BUTCHER. Over 700 percent.

Mr. PETTY. My hesitation comes about because the Bureau of Census collects these statistics and the secrecy provision in the filing of individual statistical forms is an inherent part of the quality of our statistics. There may be other sources for that information so let me probe that.

Mrs. BUTCHER. Mr. Chairman, what I was thinking was that when you look at this type of increase and the type of documentation which we receive from the Exim Bank indicating that now our own involvement in financing investment and the selling of goods in South Africa and actually financing loans and grants to South Africa has changed significantly, a question arises as to whether or not there might not be some policy of increasing investment and involvement in South Africa both in the public and private sector—some policy whether it is deliberately or consciously stated.

¹² As of this date, no reply has been received from the Department of the Treasury. It is hoped that the Department will supply the information requested which will then appear in Part III of these hearings.

Mr. PETTY. None of which I am aware.

Mrs. BUTCHER. Mr. Petty, if you would turn to U.S. investments in South Africa, there are certain questions we would like to ask.

What was the value of the total U.S. investment in South Africa, including indirect investment for the last 10 years?

You may comment now perhaps and then submit the documentation.

Mr. PETTY. Most of our investment in the last decade has been direct investment. Subject to the equalization tax in 1963, portfolio flows have been substantially reduced, although there were some speculative flows in 1967 and early 1968. Those have a habit of coming and going, particularly if they are speculative in nature, where individuals pay the tax and there was some of that at that time.

I would like to be able to file a statement to comply with those portfolio flows during the last decade.

(The following information was supplied:)

We do not have comprehensive data on the present value of total U.S. investments in South Africa. The Department of Commerce publishes figures on the book value of U.S. direct investments in South Africa. Data are reported to the Treasury on the aggregate amount of outstanding claims on South Africa representing loans and other forms of credit extended by U.S. banks and other business firms. We also get reports on transactions in long-term securities with foreigners, but these do not tell us the aggregate amount of long-term South African securities owned by residents of the United States.

The book value of U.S. direct investments in South Africa was \$286 million at the end of 1960 and increased to \$864 million at the end of 1970. The reports of transactions in long-term securities with residents of South Africa indicate negligible portfolio flows during the last decade. The figures on transactions in foreign securities are somewhat difficult to interpret since "foreign securities" may include securities issued by other countries and by international institutions as well as South African securities; but the reported figures indicate virtually no significant net U.S. portfolio investment in South Africa over the past ten years. The data also indicate that South African net investment in U.S. securities was negligible over the period.

NET TRANSACTIONS IN LONG TERM SECURITIES WITH SOUTH AFRICA AS REPORTED BY BANKS AND BROKERS IN THE UNITED STATES

[In millions of dollars]

Calendar year	Net domestic and foreign securities	Domestic U.S. securities			Foreign securities			
		Net total	Market-able U.S. Government bonds and notes	Corporate and other	Net total	Bonds	Stocks	
				Bonds	Stocks			
1960.....	10	1	(1)	(1)	1	9	6	3
1961.....	-30	(1)	(1)	(1)	(1)	-30	-30	(1)
1962.....	13	(1)	(1)	(1)	(1)	13	13	(1)
1963.....	10	(1)	(1)	(1)	(1)	10	9	1
1964.....	5	(1)	(1)	(1)	(1)	5	5	(1)
1965.....	4	(1)	(1)	(1)	(1)	4	4	(1)
1966.....	4	(1)	(1)	(1)	(1)	4	4	(1)
1967.....	1	(1)	(1)	(1)	(1)	1	2	-1
1968.....	-7	-1	(1)	(1)	-1	-6	8	-14
1969.....	4	6	(1)	(1)	6	-2	(1)	-2
1970.....	-2	(1)	(1)	(1)	(1)	-2	(1)	-2
January to October 1971 ²	1	(1)	(1)	(1)	(1)	1	3	-2

¹ Less than \$500,000.

² Preliminary.

Note: Net purchases plus (+) or sales minus (-) by South Africa.

Source: Treasury Bulletin.

Mrs. BUTCHER. I think you said the figures on indirect investment are not published by the Department of Commerce. Why is that?

Mr. PETTY. I don't believe I said that. I must have misspoken.

Mrs. BUTCHER. You didn't say by the Department of Commerce, you said they are not easily available.

Mr. PETTY. I wanted to be clear on terms. You said direct investment and portfolio investment?

Mrs. BUTCHER. No; I just said indirect investment.

Mr. PETTY. Indirect investment could come in several different forms. Now, if it comes in the form of a short-term bank loan—

Mrs. BUTCHER. You would provide that?

Mr. PETTY. That could be provided. I just want to be precise.

Mrs. BUTCHER. Well, what we are seeking is as full a picture as possible.

Mr. PETTY. I now understand the request and as comprehensive a reply as is possible will be provided.

(The information requested follows:)

The following tables present figures on claims on South Africa reported by banks and by nonbanking concerns in the United States. The tables show the amounts outstanding at the end of each year from 1960. The reporting system does not provide information on the identity of the foreign borrowers, or on the nature of the transactions that give rise to these claims, apart from the descriptive column headings.

Through the end of 1970, total claims on South Africa reported by banks increased by \$25 million; an increase of \$66 million in short-term claims was partially offset by a decline of \$41 million in outstanding long-term claims. There was a fairly sharp rise in bank-reported claims during the first ten months of 1971.

Claims on South Africa reported by nonbanking firms also increased by \$25 million through the end of 1970; nearly all of this increase was in short-term claims. Nonbank claims rose by an additional \$10 million in the first half of 1971, of which \$8 million was an increase in short-term claims.

OUTSTANDING CLAIMS ON SOUTH AFRICA AS REPORTED BY NONBANKING CONCERNS IN THE UNITED STATES

[In millions of dollars]

End of period	Total claims	Short term claims	Long term claims
1960.....	7	7	(1)
1961.....	11	10	1
1962.....	17	10	7
1963.....	14	10	4
1964.....	13	11	2
1965.....	20	20	(1)
1966.....	24	23	1
1967.....	15	14	1
1968.....	35	31	4
1969.....	32	30	2
1970.....	32	30	2
June 1971.....	42	38	4

1 Less than \$500,000.

Source: Treasury Bulletin.

OUTSTANDING CLAIMS ON SOUTH AFRICA AS REPORTED BY BANKS IN THE UNITED STATES

[In millions of dollars]

End of period	Total claims	Short term claims					Payable in foreign currencies	Long term claims
		Payable in dollars						
		Total	Loans	Collec-tions	Accept-ances	Other		
1960.....	72	11	1	9	1	(1)	61	
1961.....	79	10	(1)	8	(1)	2	69	
1962.....	49	25	14	1	10	(1)	24	
1963.....	30	15	2	11	1	(1)	15	
1964.....	43	20	4	15	1	(1)	23	
1965.....	72	34	15	15	2	(1)	38	
1966.....	111	50	27	17	5	(1)	61	
1967.....	72	37	11	17	8	(1)	35	
1968.....	79	46	9	20	16	(1)	33	
1969.....	85	55	3	25	26	(1)	30	
1970.....	97	77	19	25	30	2	20	
October 1971*.....	187	141	37	29	67	3	46	

¹ Less than \$500,000.

² Preliminary.

Source: Treasury Bulletin.

Mrs. BUTCHER. Has there been indirect investment in South Africa by U.S. public authorities?

Mr. PETTY. I can't recall any that come to my attention. You have the respective agencies testifying and they would have comment on theirs. In the lending agencies Exim was testifying and the only other one I would be familiar with was the World Bank.

Mrs. BUTCHER. You said you would check on that.

Mr. PETTY. The World Bank has not made a loan since 1966 and they just have about \$2 million outstanding. In this case South Africa becomes a donor and not a borrower.

Mrs. BUTCHER. Do you have any comment on this?

Mr. GERVASI. No.

Mrs. BUTCHER. What were the U.S. trade data firms based in South Africa over the past decade in each of those years?

I understand you would have to get those figures and submit them.

Mr. PETTY. When you say U.S. trade data, is that financed by U.S. governmental agencies? There are some trade credits. If, for example, corporation X sells a barrel of grease for 120 days that may be the terms of the trade of that particular product and that would appear as a trade credit if it is outstanding at a bookkeeping time. We could provide that and try to give some explanation as to the statistical support.

Mrs. BUTCHER. How much was granted in trade credits to U.S. firms based in South Africa, and were trade credits granted to any firms based in South Africa, or operating in South Africa, by any U.S. public authorities either for importation of goods into South Africa or for goods to be reexported to South Africa?¹³

Mr. PETTY. I will provide that in my answer.

Mrs. BUTCHER. All right.

¹³ As of this date, no satisfactory reply has been received from the Department of the Treasury. It is hoped that the Department will supply the information requested which will then appear in Part III of these hearings.

We will be interested when you are providing the material on trade credits on the identity of the recipients.

Mr. PETTY. All right. Now that may pose a problem because on the same reporting provision of the Bureau of Census that I was referring to earlier, the reporting form as I recall requests aggregate and/or net, depending on the statistics at the reporting date without definition of who was the beneficiary.

It is inherent in the banking secrecy, privacy provisions of our constitution but I would—

Mrs. BUTCHER. To the best of your ability.

Mr. PETTY. To the best of my ability, I would be happy to.

(The information requested follows:)

We do not get separate reports on trade credit. Trade credit extended to South Africa by banks and nonbank business concerns are included in the data already provided on claims reported by these firms. While trade credits are not separately identified, some of the categories on the report forms consist largely of trade credit. The figures reported by banks for collections and acceptances are substantially all trade credit; and a substantial part of the short-term loans reported by banks are believed to finance trade. Some of the long-term claims reported by banks may also finance trade, although we have little direct information on this. Similarly, a considerable part of the claims reported by nonbanks are believed to be trade-connected, especially the short-term claims.

As noted above, the data reported to us do not provide information on the identity of the borrowers, so that we cannot tell how much credit was granted to the U.S. firms based in South Africa.

There are no outstanding long-term loans extended by U.S. Government lending agencies to borrowers in South Africa. The Commodity Credit Corporation has extended some short-term credits to borrowers in South Africa to finance the export of the U.S. agricultural commodities. As of June 30, 1971, there were \$7 million of such credits outstanding.

Mrs. BUTCHER. What was the total U.S. investments in South Africa over the past decade in each of these years?

Mr. PETTY. I think when I make my report on the capital flows we could make the distinction between repatriated or distributed earnings and retained earnings and that would give you our best statistics on that point.

Mrs. BUTCHER. Could you break this down and include earnings, dividends, interest on direct investment?

Mr. PETTY. Yes; I would think the dividends would be one figure. Interest and royalties is a combined statistic, as I recall it.

I will provide as much detail as our statistics have.

Mrs. BUTCHER. We are also interested in any other payments, royalties, or fees going to the United States or to U.S. nationals in South Africa.

Would you like to comment on that, Mr. Gervasi?

Mr. GERVASI. I think the fees are important. I am not sure, I believe that is not included in "royalties."

Mr. PETTY. I don't think so, I think that is in a separate service payment and I am not enough of a statistician to know if it is separately shared.

I think it is.

Mr. GERVASI. If I am not mistaken, management fees are tending to run above a billion dollars a year.

Mr. PETTY. Worldwide.

Mrs. BUTCHER. We would want that.¹⁴

Mr. PETTY. I don't know. It is certainly a part of your services statistics and we will see how much detail is available.

Mrs. BUTCHER. What are the rates of profit earned on U.S. direct investments to South Africa?¹⁵

Mr. PETTY. I think maybe getting back to Mr. Vander Jagt's question earlier, I would try to make a summary using two or three different standards and expending the definitions that are employed and try to make some comparison on this.

The trouble is you are dealing with aggregates, but——

Mrs. BUTCHER. When you give your report would you include the rates of profit earned by the U.S. companies, branches, and subsidiaries in different sectors of the economy?¹⁶

I understand it varies considerably, say, in mining where it is very high, maybe up in the 40's, 40 some percent.

Mr. PETTY. Well, certainly just as at home invested capital varies a great deal with the industry and margins vary. I am sure that is true in South Africa as well.

Mrs. BUTCHER. There is some other statistical information we would appreciate receiving—the proportion of net capital inflows over the last 10 years in each sector, manufacturing, mining, et cetera, in the South African economy and what it has been for the last 10 years in each sector. What has been the gross capital inflows to the South African economy in each of the last 10 years?¹⁷

What have been the gross capital inflows to each sector? What proportion of equipment in South Africa is accounted for by imports? What proportion is accounted for by imports from the United States?¹⁸

Would you comment, Mr. Gervasi?

Mr. GERVASI. I think these figures would be very interesting to have because they would indicate in the first place what the larger assistance is which is rendered by capital inflows. The figure for net capital inflows is a figure which is arrived at for balance-of-payments purposes by making certain subtractions, but from the point of view of the operation of the South African economy and of corporations operating within that country, it would be very interesting to know what gross capital flows are, especially into sectors, as that would give a much clearer picture of what role foreign capital is playing in the South African economy.

My feeling is that if we look at gross flows, we are going to find that the degree of dependence is even higher than that required by the net inflow figures, which are already quite high. They run between 10 and 20 percent and I think they are presently running higher than that.

If we knew what the gross flows were, I think we would probably be quite surprised at the role that foreign capital is playing.

¹⁴ Ibid.

¹⁵ As of this date, no reply has been received from the Department of the Treasury. It is hoped that the Department will supply the information requested which will then appear in Part III of these hearings.

¹⁶ As of this date, no satisfactory reply has been received from the Department of the Treasury. It is hoped that the Department will supply the information requested which will then appear in Part III of these hearings.

¹⁷ Ibid.

¹⁸ Ibid.

Mr. PETTY. You would also want to keep an eye on the net if there is some reflow that slows down capital formation.

It might show the shift between segments.

Mrs. BUTCHER. Again, in relation to South African dependency on foreign capital, if you could include the proportion of equipment expenditures in each sector accounted for by imports.

(The information requested follows:)

Figures identifying gross capital inflows into South Africa are not available. South African balance of payments statistics show the following information for total capital movements in the last ten years.

	[Million dollars]		[Million dollars]
1961.....	- 181	1967.....	+ 227
1962.....	- 123	1968.....	+ 643
1963.....	- 112	1969.....	+ 276
1964.....	- 57	1970.....	+ 701
1965.....	+ 357	1971—9 months.....	+ 771
1966.....	+ 197		

Source: South African Reserve Bank.

There is no data available which makes it possible to relate gross capital inflows into South Africa to the various sectors of the economy.

In September 1971 the South African Reserve Bank Quarterly stated that capital goods as a percentage of total imports increased from about 30 percent in 1957 to 45 percent in 1970. The following approximate figures are calculated from a chart which accompanied the Bank's comment.

Capital goods as percent of total imports

1960.....	30	1966.....	39
1961.....	32	1967.....	42
1962.....	32	1968.....	43
1963.....	37	1969.....	44
1964.....	36	1970.....	45
1965.....	40		

Classifications used to describe imports by South Africa are not specific enough to be able to assign end use categories to the goods imported. Similarly these classifications do not make it possible to split out in the appropriate categories items used for investment and those used for consumption. As a result it is not possible to determine the proportion of equipment expenditures in each sector accounted for by imports or to identify the U.S. share of capital equipment imports into South Africa.

Mrs. BUTCHER. Mr. Petty, do you feel South Africa's economy would be slowed down if it were unable to obtain capital goods?

Mr. PETTY. Well, I am generally impressed by the vitality of economics when the going gets tough. Sure, the inability to find spare parts causes hardships, but also presents added growth opportunities. My experience has been it also provides a new stimulus to develop that industrial capacity at home.

Its effect is more over the medium term than the long term, and perhaps not at all over the short term. It varies a great deal by circumstances.

Mrs. BUTCHER. The Deputy Assistant Secretary of State, Robert Smith, in speaking last spring, did say there is no doubt that foreign investment strengthens the regime and so to some extent supports its racial policies.

Mr. PERRY. I would think it strengthens the economy and I will leave it to the political officer to conclude whether that automatically strengthens the regime.

Mrs. BUTCHER. These are more questions in regard to the dependency of South Africa on foreign capital.

What is the volume and value of capital goods bought and sold in South Africa by U.S. branches and subsidiaries? ¹⁹

In summary, how dependent is the South African economy on capital imports in financial terms? ²⁰

Second, how dependent is it upon imports of capital goods? ²¹

Mr. PERRY. I will be happy to answer those as well. I would think that statistical information and sales of U.S. subsidiaries and branches operating in South Africa, probably the best statistics would be from the U.S. Chamber of Commerce, in South Africa.

Mrs. BUTCHER. Particularly on imports of capital goods, we have there a question which bears on the relation to their ability to get sophisticated capital, advanced technology.

Mr. Gervasi, do you wish to comment overall on the question of South African dependency?

Mr. GERVASI. I think it is a rather important question. What South Africa lacks is sophisticated technology, the sophisticated technology which we in Western industrial countries are constantly developing. They are still, in terms of industrialization, rather far behind, so their capital imports are very important to them.

They are important because it is through those imports that they bring in, in an embodied form, modern technology. So, therefore, the modern technology is moving on apace in the South African economy, it is moving on as a result of the willingness of Western countries to make modern technology available. And the volume of imported capital goods is very significant.

As I said in my testimony, I think it is fair to say—and I am not, by any means, the first one to make the comment—that we are underwriting economic growth in South Africa. And that, of course, is critical to South Africa. For if the South African economy should falter in its growth, the Government would be facing a serious problem. It is only by growth that you can maintain any kind of stability.

Even those in the white enclaves depend on the economic expansion, and the prosperity they have enjoyed has been a very important source of strength to them. Now that prosperity is underwritten to a certain extent by Western countries who are so rapidly expanding what we call “normal” economic relations with South Africa.

Mrs. BUTCHER. Mr. Chairman, we often hear speculation in considering whether the U.S. firms might or should withdraw from South Africa, that actually U.S. business has no choice because of the capital controls imposed by South Africa.

I think it would be helpful to have Mr. Petty, if he wishes, and Mr. Gervasi address that point.

Mr. PERRY. I am just trying to refresh my memory on what a South African corporation requires, whether a prior license. Traditionally

¹⁹ *Ibid.*

²⁰ *Ibid.*

²¹ *Ibid.*

South Africa has pursued a policy, being as dependent as it is upon foreign capital, to provide a hospitable atmosphere and encourage capital inflows and, with that, there is usually a reasonably liberal policy on repatriation, particularly in the portfolio area.

Countries pursue different policies at different times on capital repatriation privileges for direct investment liquidation. I imagine in anyone's community where anybody making goods moved out, the result would be no jobs, so everybody in that community becomes involved to make sure the job stays.

It would not be surprising if that type of situation also happens in the communities in South Africa. At some point, clearly that is expressed in governmental policy with respect to their issuance of licenses.

I can give some general comments upon their regulations on this with the understanding that there is obviously administrative discretion in isolated cases; one thing, in terms of a sudden reflow, that could prompt examination of existing policy.

Mrs. BUTCHER. Mr. Gervasi?

Mr. GERVASI. Well, South Africa does operate a system of fairly tight capital controls and there is no doubt that repatriation of capital in substantial amounts would present a problem as things are presently in South Africa. However, ultimately this is a political problem.

If any government, particularly a government like the United States, or Great Britain, wished to apply pressure on South Africa, there is no doubt that the leverage which they have is substantial enough to permit a certain amount of—well, certainly a much greater repatriation of capital, but the context in which that might happen would reduce this to a relatively unimportant question.

Mr. PETTY. I would just raise a question about the degree of political leverage one country has on another country with respect to influencing the policy in the administration of a capital control program. I would be less certain than Mr. Gervasi about that influence.

Mrs. BUTCHER. But at least as you are aware now, you don't see the prohibitions existing at the present time to prevent an American company, say, from deciding to get out of South Africa and to repatriate much of its capital?

Mr. PETTY. In all honesty, I have not asked myself that question on how they administer their policy and I really could only give you a good answer by reflecting on it.

Mrs. BUTCHER. And submitting it?

Mr. PETTY. Yes.

(The information requested follows:)

From the information available, it appears that the present foreign exchange regulations of the Government of South Africa would tend to discourage private investors from liquidating their investments in South Africa and repatriating the proceeds.

Capital investment is basically welcome and there are no restrictions on inward transfers of funds for this purpose. However, such investment is subject to the approval of the Exchange Control and also the Department of Planning and the New Industries Committee. According to the IMF, "Outward transfers of capital by residents in general require the approval of the South African Reserve Bank and are usually not allowed" (22nd Annual Report on Exchange Restrictions; 1971). The Department of Commerce describes the procedure with respect to liquidating an investment as follows:

"As a general rule, the local sale proceeds of all nonresident owned investments are subject to a blocking procedure (blocked rand), i.e., the proceeds must be credited to a blocked account in the name of the nonresident concerned with a commercial bank in the Republic. There are facilities through which a nonresident may redeem the proceeds of sale. Blocked funds may be used: (1) to purchase or subscribe for government, municipal or public utility securities which will be redeemed in foreign currency if held continuously for at least 5 years, (2) to tender for nonresident bonds issued by the Government and redeemable in foreign currency 5 years from the date of issue, or (3) to purchase South African securities with a quotation on a foreign stock exchange for export and sale abroad.

Some exceptions are made, however, both in respect to financing of blocked rand and repatriation of the proceeds of sale from direct investment. The Exchange Control is prepared to consider applications for the investment of blocked funds in new manufacturing industries not competing with firms established in labor surplus (border) areas. Sympathetic consideration will be given to transfer of proceeds for long-term direct investment if the sale in whole or in part is to South Africans who would then obtain a larger share in a foreign controlled local operation."

(*Establishing a Business in Southern Africa*, p. 7, OBR 70-50, September 1970.)

Mr. DIGGS. We have a list of questions here, Mr. Secretary, that I would like to submit to you which I would assume that you may not be specifically prepared to provide at this point. We would like to submit these questions to you so that you could answer them.

Mr. PERRY. I will be happy to, sir.

Mr. DIGGS. There are three questions on the whole subject of South African trade information. For example, we understand that they changed their trade classifications several times in the last decade and that they have ceased to identify export and imports with Africans by country, and so on.

Then we have got another group, almost about a dozen questions, on the matter of the subject of U.S. branches and subsidiaries in South Africa that, in our view, has rather critical implications for the mission of the committee.

We would like to submit those so that you can respond because I assume that you may not have it at your finger tips.

Mr. PERRY. You are assuming right, sir.

Mr. DIGGS. The questions are as follows:

On South Africa trade information:

1. The South African authorities have changed their trade classification several times in the last decade. Can you please give a detailed breakdown of South African imports and exports according to the Standard Industrial Trade Classification (SITC) for the last 10 years?

2. Why did South Africa cease to identify exports and imports with Africa by country?

3. Can you please give a breakdown of South Africa's trade with African countries for the last 10 years, at least by SITC divisions? ²² U.S. firms participate in this trade from South Africa.

These questions are on U.S. branches and subsidiaries in South Africa:

1. What was the value of sales of U.S. branches and subsidiaries in South Africa in each of the last 10 years? ²³

²² Ibid.

²³ Ibid.

2. To what countries in Africa did U.S. branches and subsidiaries in South Africa export in this period? ²⁴

3. What was the distribution of these exports by industry? ²⁵

4. What products were exported? Please give at least three-digit standard industrial trade classification specification. ²⁶

5. To what countries in Africa were these products exported? ²⁷

6. What was the value of shipments to each country for each category? ²⁸

7. What proportion of the profits of such branches and subsidiaries was earned by exporting to African countries from South Africa? ²⁹

8. What was the value of the shipments of U.S. branches and subsidiaries sent to such free ports as Mauritius and then reexported to African countries? ³⁰

9. What products were shipped in this way? ³¹

10. To what other areas and countries did U.S. branches and subsidiaries based in South Africa export? ³²

11. What products were shipped to each country or area? ³³

(The information requested follows:)

The following are Treasury's submission in response:

2-3. South Africa ceased to identify its trade with other countries in Africa in 1965. It is our understanding this decision was made on political grounds. Since that time no statistics are available for this trade.

4. (1-11) We are informed by the U.S. Embassy in South Africa that information concerning the trade, production and profit records of U.S. branches and subsidiaries in South Africa is simply not compiled and collected in South Africa. There is no requirement, that we know of, that this type of information be reported to any U.S. government agency.

Our Embassy comments that as South Africa is a relatively high cost producer, it is doubtful that any significant sales are made to other African countries by U.S. firms in South Africa. Most such sales would be directly from the U.S. or the European subsidiaries of American firms.

²⁴ Ibid.

²⁵ Ibid.

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Ibid.

³⁰ Ibid.

³¹ Ibid.

³² Ibid.

³³ Ibid.

SOUTH AFRICA
TRADE BY COMMODITIES ACCORDING TO THE STANDARD INTERNATIONAL TRADE CLASSIFICATION, REVISED
[Value in million rands]

SITC code	Commodity	General imports f.o.b.					National exports f.o.b.				
		1951	1952	1963	1964	1961	1962	1963	1964	1961	
	Total trade 4.....	1,004.61	1,022.21	1,202.71	0 1,525.79	7852.81	867.39	914.25	953.57		
0	Food and live animals.....	40.79	39.52	59.80	65.36	215.53	262.96	219.19	272.26		
01	Meat and preparations.....	.47	.33	.35	1.02	6.73	8.70	8.70	13.65		
02	Dairy products and eggs.....	.18	.53	1.58	6.90	11.80	7.36	3.97	5.38		
023	Butter.....	.01	.07	.81	5.32	6.64	2.42	.70	.86		
031	Fish: fresh, etc.....	.32	.61	.42	1.05	11.64	11.00	12.86	12.86		
031.3	Crustacea and molluscs, fresh, etc.....	0	0	0	.26	7.48	15.54	8.33	8.46		
032	Fish: preserved.....	1.68	1.40	1.88	1.99	17.85	13.73	10.29	16.49		
04	Cereals and preparations.....	10.59	9.39	23.23	17.75	46.18	82.00	95.03	61.37		
041	Wheat, unmilled.....	4.44	3.38	14.67	8.51	0	0	0	0		
044	Rice.....	4.80	4.73	6.38	6.34	0	0	0	0		
05	Maize, unmilled 1.....	.01	.04	.07	.01	0	0	0	0		
051	Fruit and vegetables.....	4.56	4.43	5.88	6.27	38.73	72.21	88.30	53.14		
051.4	Fruit and nuts, fresh.....	1.25	1.45	1.74	1.93	42.15	50.18	48.00	57.44		
051.4	Oranges, tangerines and mandarines.....	0	.01	.03	0	21.59	22.99	21.58	27.07		
051.4	Apples.....	.01	.01	.02	.03	7.95	9.48	10.09	12.32		
051.5	Grapes.....	0	0	0	0	5.54	9.59	6.82	8.40		
053	Fruit: prepared and preserved.....	.45	.41	.45	.73	33.09	27.79	39.08	36.91		
06	Sugar and preparations.....	1.02	1.02	1.01	4.48	19.53	32.80	40.35	36.27		
061	Sugar and honey.....	.72	.61	.53	4.06	18.63	31.40	38.81	35.55		
061.1	Raw sugar.....	.38	0	0	3.68	17.10	28.62	33.16	34.25		
07	Coffee, tea, cocoa and spices.....	20.45	20.23	23.37	23.80	1.17	.58	.61	1.41		
071	Coffee.....	4.01	4.11	6.54	4.70	.31	.36	.46	.54		
074	Tea and maté.....	13.89	12.58	13.83	14.26	17.25	19.76	21.62	24.26		
081	Fodder, n.e.s.....	.04	.07	.06	.20	10.86	13.54	15.28	17.61		
081.4	Meat meal and fish meal.....	.02	.05	.02	0	7.18	7.39	8.52	9.46		
1	Beverages and tobacco.....	6.78	7.47	9.52	13.00	4.49	4.14	4.50	5.29		
112	Alcoholic beverages.....	3.17	3.52	3.84	5.37	2.64	3.10	3.96	4.09		
12	Tobacco and manufactures.....	3.59	3.93	5.66	7.60	31.78	31.09	32.10	330.90		
2	Crude materials, inedible, except fuels.....	70.81	70.00	80.60	112.58	317.85	310.99	320.10	330.90		
211	Hides and skins, undressed.....	.21	.29	.53	.85	16.80	15.81	17.53	17.44		
211.1	Hides of cattle, etc., n.e.s. undressed.....	.16	.24	.49	.73	5.96	5.65	5.54	5.07		
211.7	Sheep and lamb skins without the wool.....	.03	.02	.03	.01	9.09	8.48	9.99	4.32		
212	Fur skins, undressed.....	.16	.23	.29	.36	7.74	9.59	11.23	11.59		
221	Oil seeds, oil nuts and oil kernels.....	.07	.03	.02	.07	9.93	7.73	10.52	9.98		
221.1	Groundnuts (peanuts), green.....	0	0	0	.01	9.56	6.86	9.87	9.63		

231	Crude rubber (incl. synthetic and reclaimed)	12.28	13.80	17.60	.02	.02	.02	.03
231.1	Natural rubber and rubber-like gums	6.86	7.42	10.31	0	0	0	0
231.2	Synthetic rubber	5.17	6.08	6.94	0	0	0	.01
243	Wood, shaped or simply worked	13.25	14.79	19.90	0.42	0.44	0.12	.20
243.2	Lumber, conifer	5.82	5.17	4.76	0	0	0	.02
243.3	Lumber, non-conifer	6.59	6.98	11.30	0.42	0.44	0.12	.13
251	Pulp and waste paper	1.89	1.11	2.32	0	0	0	0
251.6	Chemical wood pulp, dissolving grades	28.59	33.16	30.87	9.55	9.75	10.98	12.30
262	Textile fibres	5.42	5.93	.02	6.05	9.75	10.93	10.97
262.1	Wool and other animal hair	2.49	2.57	30.87	117.42	115.98	128.05	133.38
262.2	Sheep's and lamb's wool, greasy	2.20	2.51	1.97	91.41	89.80	126.87	132.31
262.3	Sheep's and lamb's wool, degreased	.07	0	1.16	10.29	9.96	11.14	10.82
262.8	Fine animal hair, excl. wool, not carded or combed	.30	0	1.16	7.79	7.18	10.76	11.70
263	Wool tops	9.93	9.46	9.96	7.00	7.57	8.99	9.46
263.1	Cotton	9.51	9.29	9.32	.24	.34	.83	.87
263.2	Raw cotton, other than linters	6.28	8.96	11.73	.21	.30	.81	0
266	Synthetic and regenerated fibres	4.19	10.02	8.07	0	0	0	.17
266.3	Regenerated fibres suitable for spinning	8.53	8.94	32.60	30.85	31.85	33.57	37.93
27	Crude fertilizers and minerals	(?)	(?)	26.04	0	0	0	0
275.1	Industrial diamonds	.64	.31	.39	23.83	25.30	24.59	27.88
276.4	Asbestos, crude, washed or ground	2.17	2.69	2.76	122.29	116.57	103.68	103.68
28	Metalliferous ores and metal scrap	0	0	0	4.07	5.36	4.56	7.77
281	Iron ore and concentrates ¹	1.63	1.55	1.32	37.73	36.56	31.94	33.97
283	Ores, concentrates of non-ferrous base metals	0	0	0	4.32	3.95	2.34	2.34
283.1	Copper ore and concentrates ¹	0	0	0	10.90	10.26	9.87	6.38
283.4	Lead ore and concentrates ¹	0	0	0	1.05	1.51	1.70	3.34
283.5	Zinc ore and concentrates	0	0	0	1.94	1.26	1.25	1.34
283.6	Tin ores and concentrates	0	0	0	11.44	10.72	10.99	10.41
283.7	Manganese ore and concentrates ¹	.01	.01	.01	5.94	5.37	4.06	4.39
283.8	Chromium ore and concentrates ¹	.93	.37	.62	79.37	74.39	66.95	58.07
283.9 (1)	Uranium ore and concentrates ¹	76.20	79.07	91.42	12.54	15.76	17.14	29.84
286	Mineral fuels, lubricants, related materials	0	0	0	5.07	8.18	7.54	7.97
3	Coal, coke and briquettes	0	0	0	4.98	8.02	7.50	7.96
321	Petroleum crude and partly refined ¹	12.52	13.88	18.23	0	0	0	0
331	Petroleum, products	63.68	57.89	48.68	7.47	7.58	9.60	21.78
332	Motor spirit, etc. ¹	28.45	24.13	15.55	.01	0	.02	.09
332.1	Lamp oil and white spirit ¹	9.42	9.43	10.16	.06	.01	.23	.67
332.2	Distillate fuels ¹	11.53	12.29	6.37	.08	.07	.32	2.53
332.3	Residual fuel oils ¹	1.87	1.44	10.07	4.46	4.73	6.79	15.41
332.4	Lubricating oils and greases ¹	9.98	9.12	10.88	0	0	0	0
332.5	Animal and vegetable oils and fats	7.71	6.51	7.72	11.32	8.68	6.90	9.30
4	Animal oils and fats	4.19	3.18	3.77	6.00	5.45	4.30	6.44
411	Oils of fish and marine mammals	2.93	.02	0	5.93	5.45	4.29	6.39
411.1	Fixed vegetable oils and fats	73.24	3.00	3.41	5.25	3.11	2.52	2.81
42	Chemicals	6.23	8.12	123.01	31.82	30.84	31.68	33.75
5	Organic chemicals	0	9.87	13.01	1.11	1.73	1.97	3.73
512	Inorganic chemicals, etc.	4.71	3.11	3.85	3.73	2.61	2.25	5.99

See footnotes at end of table.

SOUTH AFRICA
TRADE BY COMMODITIES ACCORDING TO THE STANDARD INTERNATIONAL TRADE CLASSIFICATION, REVISED—Continued

[Value in million rands]

SITC code	Commodity	General imports f.o.b.				National exports f.o.b.			
		1961	1962	1963	1964	1961	1962	1963	1964
514	Other inorganic chemicals.....	5.65	5.66	6.61	9.05	3.48	2.63	2.97	2.92
532	Dyeing and tanning extracts, incl. synthetic.....	1.84	2.18	2.73	3.90	6.58	6.91	7.55	7.81
532.4	Tanning extracts of vegetable origin.....	11	10	11	10	6.54	6.85	7.49	7.75
533	Pigments, paints, varnishes, etc.....	3.49	3.09	4.03	4.54	1.19	1.47	1.37	1.77
541	Medicinal, pharmaceutical products.....	12.73	12.70	14.66	17.13	1.42	1.47	1.43	1.76
541.3	Antibiotics.....	5.45	4.86	5.57	5.50	.37	.40	.25	0
541.7	Medicaments.....	6.01	6.59	7.99	8.79	1.05	1.07	1.17	.99
561	Fertilizers, manufactured.....	3.45	3.25	5.85	14.43	.28	.68	1.08	.54
571	Explosives and pyrotechnic products.....	3.37	1.33	1.74	1.07	6.04	6.30	6.50	6.18
571.1	Propellant powders, etc.....	.42	.54	.86	.81	4.99	4.74	4.90	4.68
581	Plastic materials.....	11.76	14.15	17.13	25.99	1.19	1.07	.63	1.06
589	Chemical materials and products, n.e.s.....	17.20	16.57	17.52	24.87	4.72	5.02	4.64	4.34
6	Manufactured goods classified by material.....	277.13	291.09	320.22	356.56	200.16	184.15	199.43	212.67
61	Leather and manufactures, n.e.s.....	7.80	7.51	8.64	9.37	.77	.73	.66	.60
611	Leather.....	6.61	6.40	7.41	8.38	.51	.45	.37	.31
62	Rubber manufactures, n.e.s.....	4.33	4.22	4.85	6.83	5.09	4.20	3.71	3.43
629.1	Rubber tyres and tubes.....	1.45	1.43	1.53	1.67	3.40	2.76	2.46	1.47
63	Wood and cork manufactures.....	4.81	4.55	4.64	6.41	1.11	1.15	.72	.51
641	Paper and paperboard.....	28.01	26.98	29.88	35.51	3.58	3.56	4.65	6.35
641.1	Newsprint.....	6.40	4.54	4.52	6.84	0	0	0	.01
641.3	Kraftpaper and paperboard.....	6.06	6.28	5.61	5.01	0	.77	0	.73
641.5	Machine-made paper and paperboard, n.e.s.....	13.32	13.68	14.11	11.79	.84	.77	1.18	.66
65	Textile yarn, fabrics, etc.....	120.24	134.60	140.75	150.76	5.06	4.44	4.52	4.18
651	Textile yarn and thread.....	21.76	24.22	25.69	33.44	1.07	1.09	1.17	1.20
651.2	Yarn of wool and hair.....	5.05	4.35	3.57	4.40	.13	.25	.18	.24
651.4	Yarn of cotton, bleached, dyed, mercerized, etc.....	4.59	4.84	5.03	5.40	.22	.19	.18	.22
651.6	Yarn of synthetic fibres.....	5.62	8.33	11.39	16.87	0	0	0	.26
652	Cotton fabrics.....	33.80	34.43	39.20	36.26	.04	.05	.03	.04
652.2	Cotton fabrics, not grey.....	32.57	33.44	38.12	34.77	.04	.05	.03	0
653	Textile fabrics, other than cotton.....	44.25	51.45	51.13	55.61	.51	.49	.39	.48
653.2	Woolen fabrics.....	6.49	6.13	6.94	7.35	.40	.33	.25	.26
653.5	Fabrics of synthetic fibres.....	7.55	11.24	10.26	15.70	0	0	0	.07
653.6	Fabrics of regenerated (artificial) fibres.....	19.91	22.55	21.87	24.37	.07	.06	.04	.09
654	Tulle, lace, embroidery, ribbons, etc.....	5.47	5.61	7.38	8.87	.49	.36	.38	.18
656	Made-up to tiles, n.e.s.....	4.80	11.95	8.33	4.03	.57	.55	.45	.20
656.1	Bags and sacks of textile materials.....	4.80	8.77	5.75	4.06	.06	.08	.04	0
66	Non-metallic mineral manufactures, n.e.s.....	35.14	35.87	39.57	21.18	89.12	78.90	90.83	99.85
667	Precious, semi-precious stones, pearls.....	* 25.78	* 25.16	* 26.62	1.99	84.04	73.46	85.65	95.58

67	Diamonds: rough and uncut 1.....	1.60	59.25	50.40	65.63	74.06
671	Diamonds: cut and polished 1.....	.12	24.47	22.79	20.41	20.89
671.1	Iron and steel.....	43.27	41.07	41.52	40.74	39.77
671.2	Pig and sponge iron including powder.....	.86	23.51	16.16	19.39	25.89
671.4	Pig iron.....	0	8.43	7.28	6.46	10.12
673	Ferro-manganese.....	0	11.72	7.02	8.92	9.79
674	Iron and steel bars, rods, etc.....	2.37	4.06	4.80	5.02	2.30
674.1	Universals, plates and sheets of iron or steel.....	15.19	8.32	14.51	10.68	6.00
674.7	Tinned plates and sheets.....	9.36	.01	.01	.06	.06
676	Rails and railway track construction material.....	2.35	1.27	1.60	1.54	1.28
678	Tubes, pipes and fittings of iron or steel.....	4.41	2.37	2.28	3.17	3.41
681	Non-ferrous metals.....	41.13	44.25	37.58	43.41	47.07
681.1	Silver and platinum group metals.....	.60	18.32	14.80	11.24	-----
681.2	Platinum, etc., unwrought or partly worked.....	.15	17.23	13.20	9.70	-----
682	Copper.....	13.55	21.98	18.52	29.30	36.66
682.1	Copper and alloys, worked.....	11.10	21.70	18.25	29.02	36.00
684	Aluminum.....	8.58	5.8	.60	.63	.70
684.2	Aluminum and alloys, worked.....	7.10	5.8	.60	.63	.69
685	Lead.....	1.79	.02	.01	.05	6.25
685.1	Lead and alloys, unwrought.....	1.47	.01	.01	.05	6.22
686	Zinc.....	3.22	.03	.02	.02	.02
686.1	Zinc and alloys, unwrought.....	3.17	0	0	0	0
687	Tin.....	1.47	.03	0	0	.01
687.1	Tin and alloys, unwrought.....	1.41	.03	0	0	.01
69	Manufactures of metals, n.e.s.....	32.33	8.19	10.05	8.59	8.10
693	Wire products and fencing grills.....	2.50	.75	.63	.66	1.97
695	Tools for use in the hand or in machines.....	10.19	.28	2.41	2.47	1.45
695.1	Manufactures of metals, n.e.s.....	6.49	3.25	2.95	2.59	2.41
698	Machinery and transport equipment.....	7.56	35.46	29.84	25.59	27.89
7	Power generating machinery (not electric).....	474.42	9.49	34	19	.44
711	Internal combustion engines, not for aircraft.....	11.45	18.66	.02	.02	0
711.5	Tractors, not for tractor-trailers.....	4.86	.01	.02	.02	1.71
712	Agricultural machinery.....	31.07	1.33	1.52	1.59	.07
712.5	Tractors.....	23.84	0	.02	0	.03
714	Office machines.....	17.84	15.67	.01	.01	0
714.2	Calculating, accounting, etc. machines.....	7.01	3.96	0	0	0
715	Metalworking machinery.....	6.61	5.79	0	0	.12
715.1	Metalworking machine tools.....	6.78	14.09	0	0	0
717	Textile and leather machinery.....	6.76	13.98	0	0	.05
717.1	Textile machinery.....	12.47	18.93	0	0	.07
718	Machines for special industries.....	8.38	26.90	0	0	0
718.4	Construction and mining machinery, n.e.s.....	18.27	20.74	0	0	0
719	Machinery and appliances, n.e.s.....	13.74	46.58	7.23	6.42	5.38
719.2	Pumps and centrifuges.....	73.57	14.13	6.50	5.85	4.01
719.3	Mechanical handling equipment.....	69.27	119.28	8.20	7.81	11.02
72	Electrical machinery and appliances.....	5.49	7.10	1.05	.92	1.80
722	Electrical power machinery.....	5.47	12.31	1.19	1.62	1.89
722.1	Electric power machinery.....	74.14	89.50	4.69	4.36	4.35
722.2	Switchgear.....	28.78	33.32	1.09	.93	1.51
		14.15	18.22	.27	.28	1.32
		11.33	12.12	.82	.65	1.18

See footnotes at end of table.

SOUTH AFRICA
TRADE BY COMMODITIES ACCORDING TO THE STANDARD INTERNATIONAL TRADE CLASSIFICATION, REVISED—Continued

[Value in million rands]

SITC code	Commodity	General imports f.o.b.				National exports f.o.b.			
		1961	1962	1963	1964	1961	1962	1963	1964
723	Equipment for distributing electricity.....	9.82	9.06	10.48	4.28	1.89	1.25	1.00	.94
723.2	Electrical insulating equipment.....	7.33	6.49	7.16	1.03	.40	.36	.29	.35
724	Telecommunications apparatus.....	16.19	21.50	21.43	24.91	13	15	15	.41
724.2	Radio receivers.....	5.59	7.32	7.87	10.82	.03	.03	.04	.21
725	Domestic electrical equipment.....	7.75	6.88	8.57	9.43	.73	.63	.63	.44
729	Other electrical machinery.....	5.78	7.27	7.69	16.73	2.01	1.56	1.65	1.04
73	Transport equipment.....	140.75	140.76	192.55	241.66	8.14	7.51	5.21	4.77
731	Railway vehicles.....	18.23	6.09	8.69	10.06	1.20	2.20	.98	1.05
731.1	Locomotives, steam.....	13.46	2.86	6.58	.....	0	0	0	.....
732	Road motor vehicles.....	110.78	123.28	173.05	211.11	6.36	4.81	3.93	3.27
732.1	Passenger cars, (excl. buses)	72.45	65.62	84.43	108.19	1.73	1.16	1.12	.47
732.3	Lorries and trucks.....	¹⁰ 3.80	¹⁰ 2.52	¹⁰ 2.58	56.61	.93	.39	.22	0
732.8	Parts for cars, buses, etc.....	¹⁰ 29.69	¹⁰ 31.33	¹⁰ 79.01	35.89	1.16	1.20	1.33	1.14
734	Aircraft.....	9.35	7.34	4.36	6.10	.02	.01	.02	.03
734.1	Aircraft, heavier-than-air.....	.98	3.29	1.74	3.07	0	0	0	.01
734.9	Parts of aircraft, etc.....	8.36	4.04	2.62	3.03	.02	.01	.02	.01
8	Miscellaneous manufactured articles.....	69.91	65.30	83.86	102.77	16.50	15.17	13.57	10.39
812	Sanitary, plumbing, heating fixtures, etc.....	2.39	2.22	2.72	3.31	.41	.33	.34	.47
841	Clothing.....	16.73	12.09	15.30	18.78	6.62	5.75	4.36	3.70
841.1	Clothing of textile fabrics, not knitted.....	4.18	2.96	4.09	4.50	4.87	4.65	3.21	2.43
841.4	Knitted clothing and accessories.....	7.63	4.98	6.41	8.32	.85	.35	.42	.57
86	Instruments, photographic supplies, etc.....	20.46	21.71	27.44	36.40	1.74	1.46	1.19	.96
861	Instruments, etc.....	12.01	12.37	16.80	22.35	1.35	1.21	1.10	.87
864	Watches and clocks.....	3.82	4.17	5.25	7.03	0	0	0	0
89	Manufactured articles, n.e.s.....	28.18	27.14	35.03	39.92	4.56	5.15	5.68	3.35
891	Musical instruments, phonographs, etc.....	4.09	3.97	4.78	6.75	.27	.20	.15	.17
892	Printed matter.....	7.58	6.97	11.48	10.82	1.46	1.45	1.96	1.20
894	Sporting goods, toys, etc.....	5.09	4.77	6.52	6.15	.30	.31	.31	.32
9	Commodities and transactions, n.e.s.....	19.10	20.25	4.10	20.18	4.44	1.60	1.14	17.10
911	Postal packages.....	5.12	6.12	4.13	4.84	1.43	1.40	0	1.69
931	Special transactions, n.e.s.....	4.33	14.00	.04	15.19	2.85	.07	.03	14.64

IMPORTS BY COMMODITIES ACCORDING TO THE STANDARD INTERNATIONAL TRADE CLASSIFICATION, REVISED 1
[Weight in thousand metric tons; value in million rands]

SITC code	Commodity	General imports f.o.b.							
		1967		1968		1969*			
		1965 value	1966 value	1967 Weight	1967 Value	1968 Weight	1968 Value	1969* Weight	1969* Value
	Total imports²	1,752.54	1,640.48		1,913.79		1,875.60		2,091.77
0	Food and live animals	63.85	104.73		89.16		70.51		83.89
01	Meat and preparations	1.67	4.75		8.52		9.52		9.14
02	Dairy products and eggs	11.54	9.65		3.51		1.66		1.71
023	Butter	8.13	5.98	3.2	1.89	.5	4.40	.4	1.18
031	Fish: fresh, etc.	1.30	1.25		1.41		1.94		2.30
032	Fish: preserved	1.91	1.68		2.38		2.73		2.89
04	Cereals and preparations	9.52	52.55		37.97		13.78		25.51
041	Wheat, unmilled	0	29.48	488.6	23.97	.4	10.02	1.0	10.06
042	Rice	7.40	8.33	72.3	9.54	79.0	11.16	81.0	10.82
044	Maize, unmilled	.03	11.36	26.9	1.00	.1	.03	311.5	11.13
05	Fruit and vegetables	6.95	7.18		6.62		7.97		7.40
051	Fruit and nuts, fresh	2.12	1.97		2.11		2.59		2.26
06	Sugar and preparations	5.40	1.54		1.78		2.21		2.41
061	Sugar and honey	5.05	1.24		1.39		1.69		1.74
07	Coffee, tea, cocoa and spices	23.84	24.08		24.58		27.59		27.59
071	Coffee	4.94	5.39	11.7	4.77	15.6	6.15	13.9	6.79
074	Tea and mate	15.31	14.43	17.3	14.64	19.1	14.28	19.6	14.70
1	Beverages and tobacco	12.99	17.10		15.76		14.55		16.36
11	Alcoholic beverages	6.44	5.52		5.23		6.58		7.10
12	Tobacco and manufactures	6.51	11.54		10.50		7.92		9.21
2	Crude materials, inedible, except fuels	131.80	112.22		131.47		111.15		103.99
231	Crude rubber (including synthetic and reclaimed)	12.60	9.00		11.31		10.54		13.61
231.1	Natural rubber and rubber-like gums	8.99	7.11	25.5	7.34	28.2	7.06	28.1	9.54
231.2	Synthetic rubber	3.36	2.57	9.6	3.90	8.0	3.41	10.0	3.99
24	Wood, lumber and cork	22.25	15.01		16.50		17.98		17.00
243	Wood, shaped or simply worked	18.27	12.24		13.81		15.19		13.73
243.2	Lumber, conifer	5.91	3.32	4 133.2	3.94	4 109.1	3.84	4 6.4	3.30
243.3	Lumber, nonconifer	9.18	5.83	4 192.1	7.69	4 229.7	9.33	4 233.7	10.75
26	Pulp and waste paper	2.16	3.02		3.22		2.87		5.30
262	Textile fibers	35.89	34.63		36.44		35.70		37.64
262.1	Wool and other animal hair	5.69	5.36		4.57		4.32		5.22
262.2	Sheep's and lambs' wool, greasy	2.15	1.34	1.6	1.52	.9	.82	1.1	1.10
263	Sheep's and lambs' wool, degreased	10.78	13.31	41.9	1.84	2.3	1.83	3.0	2.55
263.1	Cotton	10.78	13.31	41.9	14.84	35.0	13.62	36.6	12.56
263.1	Raw cotton, other than linters	10.05	12.17	35.7	13.39	27.1	10.84	26.6	9.44

See footnotes at end of table.

IMPORTS BY COMMODITIES ACCORDING TO THE STANDARD INTERNATIONAL TRADE CLASSIFICATION, REVISED I—Continued

[Weight in thousand metric tons; value in million rands]

SITC code	Commodity	General imports f.o.b.							
		1965		1967		1968		1969 ^a	
		value	weight	value	weight	value	weight	value	weight
266	Synthetic and regenerated fibers.....	16.96	36.3	13.77	41.3	14.27	44.7	15.42	44.7
266.3	Regenerated fibers suitable for spinning.....	14.10	8.62	14.10	7.94	14.27	7.94	9.83	10.13
27	Crude fertilizers and minerals.....	45.55	37.92	37.92	25.9	51.22	30.8	23.26	16.31
275.1	Industrial diamonds.....	36.33	25.61	25.61	3 3,618.1	36.50	3 3,618.1	7.28	3 3,080.8
276.4	Asbestos: crude, washed or ground.....	.67	1.14	1.14	14.0	1.76	13.1	1.53	2.10
28	Metalliferous ores and metal scrap.....	6.36	5.04	5.04	5.53	5.53	13.06	5.11	5.11
283	Ores, concentrates of nonferrous base metals.....	2.69	4.23	4.23	4.54	4.54	11.37	3.56	3.56
283.1	Copper ores and concentrates ¹.....	.52	1.15	1.15	8.4	1.12	59.1	8.89	1.69
283.9(1)	Chromium ores and concentrates ²	1.15	1.77	1.77	29.9	1.14	37	1.40	40
29	Crude animal and vegetable materials, not elsewhere specified.....	4.70	4.55	4.55	5.17	5.17	5.48	5.48	6.25
3	Mineral fuels, lubricants, related materials.....	92.35	103.59	103.59	112.23	112.23	123.08	123.08	118.34
331	Petroleum, cruda and partly refined.....	41.94	48.43	48.43	6 11,659.4	62.20	6 8,695.6	61.62	61.90
331.0(1)	Crude petroleum.....	35.99	40.78	40.78	6 10,663.6	53.13	6 8,314.2	57.83	61.43
332	Petroleum products.....	49.66	54.75	54.75	49.94	49.94	61.25	61.25	56.21
332.1	Motor spirit, etc.....	17.09	18.63	18.63	374.5	9.08	660.6	15.45	12.75
332.2	Lamp oil and white spirit.....	8.32	10.01	10.01	462.8	9.96	466.8	10.22	467.9
332.3	Distillate fuels.....	8.01	10.52	10.52	442.7	7.69	458.7	7.89	8.85
332.4	Residual fuels.....	.66	.17	.17	641.0	5.19	1,647.7	8.58	6.95
332.5	Lubricating oils and greases.....	11.45	11.45	11.45	12.48	12.48	10.29	10.29	3.27
4	Animal and vegetable oils and fats.....	10.77	10.57	10.57	8.81	8.81	9.61	9.61	9.10
4.1	Animal oils and fats.....	5.52	4.14	4.14	3.63	3.63	2.84	2.84	3.07
4.2	Fixed vegetable oils and fats.....	4.47	5.52	5.52	3.87	3.87	5.54	4.82	4.82
5	Chemicals.....	123.73	130.79	130.79	166.71	166.71	155.66	166.72	166.72
5.1	Organic chemicals.....	22.91	24.32	24.32	33.34	33.34	32.06	34.95	34.95
5.12	Inorganic elements, etc.....	4.35	4.86	4.86	5.32	5.32	5.41	5.34	5.34
5.14	Other inorganic chemicals.....	10.06	10.66	10.66	14.07	14.07	11.02	11.52	11.52
5.31	Synthetic organic dyes, etc.....	5.03	5.17	5.17	6.89	6.89	7.09	8.65	8.65
5.33	Pigments, paints, varnishes, etc.....	3.25	3.03	3.03	3.60	3.60	3.61	3.92	3.92
5.41	Medicinal, pharmaceutical products.....	15.89	14.42	14.42	17.27	17.27	16.34	18.06	18.06
5.41.3	Antibiotics.....	3.08	2.95	2.95	3.39	3.39	3.43	3.78	3.78
5.41.7	Medicines.....	9.70	8.69	8.69	10.44	10.44	9.35	10.21	10.21
55	Essential oils, perfume materials, etc.....	6.04	6.79	6.79	7.70	7.70	8.52	9.06	9.06
361	Fertilizers, manufactured.....	5.96	5.89	5.89	4.86	4.86	3.39	3.87	3.87
581	Plastic materials.....	31.05	33.27	33.27	37.72	37.72	40.79	47.24	47.24
599	Chemical materials and products, not elsewhere specified.....	17.07	20.23	20.23	24.77	24.77	26.77	24.48	24.48
6	Manufactured goods classified by material.....	425.84	345.97	345.97	406.06	406.06	372.72	405.82	405.82
6.1	Leather and manufactures, not elsewhere specified.....	9.23	8.88	8.88	10.13	10.13	9.75	11.48	11.48

611	Leather.....	7.76	7.71	8.85	7.71	8.85	8.54	9.70
612	Rubber manufactures, not elsewhere specified.....	8.65	7.83	10.24	7.83	10.24	10.36	11.05
629.1	Rubber tires and tubes.....	1.97	1.68	2.34	1.68	2.34	3.12	3.14
63	Wood and cork manufactures.....	8.34	6.43	6.61	6.43	6.61	6.30	9.23
64	Paper, paperboard and manufactures.....	40.04	33.92	40.69	33.92	40.69	40.92	50.33
641	Paper and paperboard.....	36.60	30.14	36.35	30.14	36.35	36.05	44.59
641.1	Newsprint.....	5.27	1.97	.72	1.97	.72	1.15	3.78
641.2	Printing and writing paper in bulk, not elsewhere specified.....	13.07	14.29	74.6	14.29	74.6	13.62	26.11
641.3	Kraftpaper and paperboard.....	6.01	3.18	43.1	3.18	43.1	3.69	5.46
641.5	Machine-made paper and paperboard, not elsewhere specified.....	7.31	6.09	29.4	6.09	29.4	6.49	1.17
65	Textile yarn, fabrics, etc.....	142.35	123.23	144.72	123.23	144.72	133.20	158.75
651	Textile yarn and thread.....	29.65	23.95	24.73	23.95	24.73	22.16	29.80
651.2	Yarn of wool and hair.....	3.36	2.49	.9	2.49	.9	2.57	3.39
651.4	Yarn of cotton, bleached, dyed, mercerized, etc.....	4.51	3.27	1.0	3.27	1.0	2.33	2.27
651.6	Yarn of synthetic fibers.....	14.65	12.36	4.7	12.36	4.7	12.8	17.57
652	Cotton fabrics.....	29.50	23.84	23.72	23.84	23.72	22.87	20.79
652.2	Cotton fabrics, not grey.....	27.94	23.23	764,785.0	23.23	764,785.0	22.53	20.42
653	Textile fabrics, other than cotton.....	53.98	53.57	68.83	53.57	68.83	60.66	72.84
653.2	Woolen fabrics.....	7.22	6.51	74,433.3	6.51	74,433.3	5.92	7.89
653.5	Fabrics of synthetic fibers.....	18.69	17.73	749,079.0	17.73	749,079.0	25.28	20.14
653.6	Fabrics of regenerated (artificial) fibers.....	21.34	19.63	747,862.7	19.63	747,862.7	14.62	25.89
654	Tulle, lace, embroidery, ribbons, etc.....	8.86	6.98	6.62	6.98	6.62	4.77	6.39
655	Special textile fabrics, etc.....	9.77	9.92	12.49	9.92	12.49	13.64	17.33
656	Made-up textiles, not elsewhere specified.....	4.23	3.48	4.44	3.48	4.44	4.81	5.46
66	Nonmetallic mineral manufacturers, not elsewhere specified.....	24.12	22.67	21.86	22.67	21.86	31.52	34.31
667	Precious, semiprecious stones, pearls.....	2.92	4.46	2.29	4.46	2.29	10.68	7.30
	Diamonds, rough and uncut.....	1.86	3.91	1.4	3.91	1.4	9.58	5.93
	Diamonds, cut and polished.....	.72	.10	.21	.10	.21	.42	.34
67	Iron and steel.....	98.38	40.48	65.46	40.48	65.46	52.53	36.82
671	Pig and sponge iron including powder.....	1.25	1.55	5.54	1.55	5.54	5.86	2.18
673	Iron and steel bars, rods, etc.....	20.74	4.40	4.87	4.40	4.87	4.75	4.88
674	Universal, plates and sheets of iron or steel.....	48.88	19.64	36.89	19.64	36.89	15.24	11.34
674.7	Tinned plates and sheets.....	13.36	12.82	150.7	12.82	150.7	3.24	4.30
676	Rails and railway track construction material.....	11.55	.51	.57	.51	.57	1.34	1.54
678	Tubes, pipes and fittings of iron or steel.....	7.57	7.97	9.22	7.97	9.22	15.51	10.45
68	Nonferrous metals.....	46.52	58.12	55.19	58.12	55.19	37.87	37.24
681	Silver and platinum group metals.....	.31	.35	.35	.35	.35	.64	.56
681.2	Platinum, etc., unworked or partly worked.....	.19	.15	.22	.15	.22	.44	.37
682	Copper.....	20.23	30.36	28.81	30.36	28.81	10.57	5.46
682.1	Copper and alloys, worked.....	16.52	25.93	32.8	25.93	32.8	6.26	2.04
684	Aluminum.....	12.16	15.04	12.33	15.04	12.33	14.17	21.59
684.1	Aluminum and alloys, unwrought.....	7.30	10.10	17.6	10.10	17.6	9.12	16.83
685	Lead.....	2.20	1.41	1.09	1.41	1.09	1.17	2.08
685.1	Lead and alloys, unwrought.....	1.87	.90	.82	.90	.82	.69	1.34
686	Zinc.....	8.28	8.31	9.90	8.31	9.90	8.38	1.82
686.1	Zinc and alloys, unwrought.....	8.08	8.21	9.66	8.21	9.66	8.05	1.72
687	Tin.....	1.23	1.04	.83	1.04	.83	.88	1.00

See footnotes at end of table.

IMPORTS BY COMMODITIES ACCORDING TO THE STANDARD INTERNATIONAL TRADE CLASSIFICATION, REVISED 1.—Continued
 [Weight in thousand metric tons; value in million rands]

SITC code	Commodity	General imports f.o.b.						
		1967		1968		1969 *		
		1965 value	1966 value	1967 Weight	1968 Value	1968 Weight	1969 Value	1969 Weight
687.1	Tin and alloys, unwrought.....	1.23	1.02	.3	77	.4	84	.4
69	Manufactures of metals, not elsewhere specified.....	48.21	42.21		49.17		50.27	
695	Tools for use in the hand or in machines.....	14.43	13.95		15.61		16.19	
698	Manufactures of metals, not elsewhere specified.....	14.85	13.55		16.19		17.22	
7	Machinery and transport equipment.....	738.05	667.56		803.70		826.09	
711	Power generating machinery (not electric).....	42.10	44.47		57.07		62.42	
711.5	Internal combustion engines, not for aircraft.....	27.12	31.55		37.35		37.85	
712	Agricultural machinery.....	43.39	33.87		45.04		43.97	
712.5	Tractors, not for tractor-trailers.....	33.35	26.47	\$ 18,914	34.41	\$ 17,973	32.49	\$ 15,872
714	Office machines.....	18.84	16.83		23.96		24.79	
714.2	Calculating, accounting, etc., machines.....	6.61	5.01	\$ 38,324	7.59	\$ 69,271	8.41	\$ 84,248
715	Metalworking machinery.....	35.62	25.98		33.09		34.21	
715.1	Metalworking machine tools.....	28.10	20.68		26.28		27.17	
717	Textile and leather machinery.....	26.71	29.47		28.82		25.12	
717.1	Textile machinery.....	20.21	24.21		22.75		18.94	
718	Machines for special industries.....	55.67	41.13		48.16		46.08	
718.4	Construction and mining machinery, not elsewhere specified.....	27.30	18.39		25.38		24.74	
719	Machinery and appliances, not elsewhere specified.....	135.55	117.41		145.58		141.25	
719.2	Pumps and centrifuges.....	22.43	20.13		25.30		23.99	
719.3	Mechanical handling equipment.....	18.33	16.74		19.04		18.54	
72	Electrical machinery and appliances.....	116.38	122.89		143.39		141.14	
722	Electric power machinery.....	47.63	54.48		59.67		52.81	
722.1	Electric power machinery.....	26.03	30.22		35.52		27.72	
722.2	Switchgear.....	21.60	24.26		24.14		25.09	
723	Equipment for distributing electricity.....	5.82	6.08		6.06		6.70	

724	Telecommunications apparatus.....	26.73	22.80	28.27	32.35	39.96
724.2	Radio receivers.....	8.43	9.45	10.91	12.35	13.12
725	Domestic electrical equipment.....	8.90	8.14	9.95	9.95	18.47
729	Other electrical machinery.....	25.76	29.70	37.58	33.50	42.38
73	Transport equipment.....	262.80	235.50	278.58	307.12	360.43
731	Railway vehicles.....	18.17	10.58	5.28	16.90	11.17
732	Road motor vehicles.....	206.74	194.67	217.08	226.78	288.05
732.1	Passenger cars (excluding buses).....	93.65	100.25	100.25	108.06	140.87
732.3	Lorries and trucks.....	16.85	33.97	43.07	11.80	13.45
732.8	Parts for cars, buses, etc.....	38.59	37.28	47.49	48.92	61.90
734	Aircraft.....	28.01	11.35	21.94	40.93	38.21
734.1	Aircraft, heavier-than-air.....	24.54	5.77	15.75	21.78	29.36
734.9	Parts of aircraft, etc.....	3.47	5.58	6.08	19.15	8.84
735	Ships and boats.....	7.60	16.93	31.99	19.93	20.56
8	Miscellaneous manufactured articles.....	122.09	110.97	141.55	154.52	189.13
812	Sanitary, plumbing, heating fixtures, etc.....	3.89	3.27	4.08	4.17	5.66
841	Clothing.....	23.33	19.95	25.00	29.13	35.30
841.1	Clothing of textile fabrics, not knitted.....	6.33	5.83	7.93	9.48	11.72
841.4	Knitted clothing and accessories.....	10.41	9.55	11.73	14.13	16.73
86	Instruments, photographic supplies, etc.....	40.45	38.90	50.94	55.92	64.61
861	Instruments, etc.....	24.09	24.23	32.93	35.05	39.54
862	Photographic and cinematographic supplies.....	6.16	6.28	7.92	9.09	10.84
864	Watches and clocks.....	7.98	6.31	7.93	9.29	11.35
89	Manufactured articles, not elsewhere specified.....	48.99	43.34	54.58	56.53	71.63
891	Musical instruments, phonographs, etc.....	6.75	6.95	9.45	12.78	17.24
892	Printed matter.....	15.76	13.33	17.19	13.92	15.97
894	Sporting goods, toys, etc.....	6.95	6.04	7.44	7.61	9.91
9	Commodities and transactions, not elsewhere specified.....	31.08	36.99	48.32	38.71	45.07
911	Postal packages.....	6.67	9.73	10.74	7.66	14.52
931	Special transactions, not elsewhere specified.....	24.52	27.10	37.46	30.94	30.42

¹ For comparable figures in the years beginning 1960, see issues of this Yearbook beginning with that of 1963; for imports and exports in the years 1957-59, according to the original SITC, see the 1960 issue of this Yearbook.

² Exclude settlers' effects.

³ Quantities are in gross weight. The metal content of the ores and concentrates is not available.

⁴ Cubic meters (thousands).

⁵ Carats (thousands).

⁶ Liters (millions).

⁷ Square meters (thousands).

⁸ Number.

Source: United Nations: Yearbook of International Trade Statistics.

EXPORTS BY COMMODITIES ACCORDING TO THE STANDARD INTERNATIONAL TRADE CLASSIFICATION, REVISED 1

[Weight in thousand metric tons; value in million rands]

SITC code	Commodity	General exports f.o.b.									
		1965		1966		1967		1968		1969 12	
		Value	Weight	Value	Weight	Value	Weight	Value	Weight	Value	Weight
	Total exports 2	926.74		1,203.47		1,360.92		1,502.41		1,524.05	
0	Food and live animals	223.76		236.61		323.56		373.74		281.91	
01	Meat and preparations	15.35		24.51		19.01		13.99		11.87	
02	Dairy products and eggs	3.13		3.57		3.75		4.20		5.39	
031	Fish: fresh, etc.	13.08		12.64		12.25		15.21		12.86	
031.3	Crustacea and molluscs, fresh, etc.	9.07	5.3	7.69	4.9	7.20	5.7	9.31	3.7	8.06	
032	Fish: preserved	10.80		11.84		11.79		12.34		10.74	
04	Cereals and preparations	24.48		9.65		91.52		122.76		34.01	
044	Maize, unmilled	13.98	46.4	2.89	2,004.0	78.95	2,955.6	106.16	760.7	29.33	
045	Cereals, unmilled, n.e.s.	6.41		2.79		8.76		11.06		9.3	
05	Fruit and vegetables	104.65		116.03		112.86		124.76		130.06	
051	Fruit and nuts, fresh	56.73		63.92		60.95		69.15		71.38	
051.1	Oranges, tangerines and mandarines	25.80	312.6	23.61	280.9	21.79	295.6	22.82	234.5	27.18	
051.4	Apples	12.26	109.4	18.20	111.2	17.58	129.7	23.74	124.8	19.43	
051.5	Grapes	8.48	29.6	9.27	34.8	10.38	31.5	9.48	29.5	9.28	
053	Fruit: prepared and preserved	41.51		44.50		43.65		46.95		48.14	
06	Sugar and preparations	24.22		35.91		41.28		44.67		42.64	
061	Sugar and honey	23.44		35.26		40.44		43.92		42.09	
061.1	Raw sugar	22.83	715.9	32.40	852.9	32.43	976.2	36.45	700.2	37.74	
07	Coffee, tea, cocoa and spices	1.52		1.68		1.78		2.18		1.82	
081	Fodder, n.e.s.	24.84		18.83		25.88		30.52		29.49	
081.4	Wheat meal and fish meal	17.09	180.5	13.35	292.2	19.95	282.1	20.98	239.1	18.09	
1	Beverages and tobacco	10.75		10.57		11.71		13.23		14.50	
11	Alcoholic beverages	5.53		4.91		4.74		5.40		4.91	
112	Tobacco and manufactures	5.15		5.60		6.90		7.78		9.53	
2	Crude materials, inedible, except fuels	305.91		356.81		335.08		338.35		375.70	
21	Hides and skins, undressed	17.74		24.11		17.66		17.96		23.55	
211	Hides of cattle, etc., n.e.s., undressed	5.93	30.4	9.31	20.6	5.48	21.4	4.93	22.7	6.32	
211.1	Sheep and lambs skins without the wool	2.57	2.3	3.39	1.9	2.72	2.6	3.60	2.4	3.97	
212	Fur skins, undressed	10.25		15.21		12.16		15.49		15.82	
221	Oil-seeds, oil nuts and oil kernels	3.15		3.21		11.35		8.76		7.94	
221.1	Groundnuts (peanuts), green	2.94	17.2	2.55	89.5	11.02	63.5	8.30	57.4	7.57	
231	Crude rubber (incl. synthetic and reclaimed)	25		63		65		81		77	
24	Wood, lumber and cork	47		55		86		100		65	
251	Pulp and waste paper	14.06		19.02		18.60		20.15		22.10	
251.6	Chemical wood pulp, dissolving grades	12.06	154.6	13.24	162.3	13.82	185.3	15.36	193.8	17.93	

26	Textile fibres.....	124.70	123.94	107.07	116.52	118.49
262	Wool and other animal hair.....	123.46	128.16	106.55	113.40	116.09
262.1	Sheep's and lambs' wool, greasy.....	94.15	97.62	78.99	87.43	87.20
262.2	Sheep's and lambs' wool, degreased.....	10.85	10.42	8.46	8.11	8.88
262.3	Fine animal hair, excl. wool, not carded or combed.....	8.70	7.54	6.60	7.56	8.64
262.8	Wool tops.....	8.84	11.91	11.32	11.10	10.67
27	Crude fertilizers and minerals.....	37.82	88.72	94.27	78.26	102.85
275.1	Industrial diamonds ³	1.00	1.00	52.37	31.41	44.79
276.4	Ashes: crude, washed or ground.....	27.87	48.98	33.37	33.20	35.53
28	Metalliferous ores and metal scrap.....	92.80	79.71	30.03	74.47	78.10
281	Iron ore and concentrates ⁴	12.77	17.41	27.65	27.65	28.85
283	Ores, concentrates of non-ferrous base metals.....	42.21	45.95	37.47	42.28	47.96
283.1	Copper ores and concentrates ⁴	3.88	5.87	2.97	4.47	5.72
283.4	Lead ores and concentrates ⁴	8.35	5.50	2.97	4.47	6.29
283.5	Zinc ores and concentrates ⁴	3.29	2.45	1.87	1.60	2.92
283.6	Tin ores and concentrates ⁴	1.86	2.57	2.85	2.30	2.29
283.7	Manganese ores and concentrates ⁴	12.77	18.65	18.30	19.66	18.74
283.9(1)	Chromium ores and concentrates ⁷	6.42	6.59	5.82	7.38	9.00
285	Silver and platinum ores.....	4.24	7.27	2.23	3.48	.27
286	Ores and concentrates of uranium, thorium.....	33.31	0	0	0	0
29	Crude animal and vegetable materials, n.e.s.....	4.65	5.08	5.60	4.93	5.42
3	Mineral fuels, lubricants, related materials.....	23.19	38.65	61.28	77.87	69.99
321	Coal, coke and briquettes.....	7.45	5.91	6.82	7.49	8.33
321.4	Coal.....	7.44	5.89	6.81	7.31	8.25.3
332	Petroleum products.....	17.69	32.62	54.26	70.19	61.89
332.1	Motor spirit, etc.....	.08	3.82	1.85	1.67	.58
332.2	Lamp oil and white spirit.....	.44	72.0	62.8	69.9	1.74
332.3	Distillate fuels.....	2.06	2.78	1.88	1.65	4.21
332.4	Residual fuel oils.....	12.20	6.65	8.61	5.57	214.8
332.5	Lubricating oils and greases.....	.34	11.82	33.65	51.18	46.42
4	Animal and vegetable oils and fats.....	9.22	4.36	5.16	7.06	5.41
411	Animals oils and fats.....	6.98	6.63	6.04	7.82	6.53
411.1	Oils of fish and marine mammals.....	6.97	4.71	3.35	4.85	3.36
42	Fixed vegetable oils and fats.....	2.03	4.70	3.31	4.69	3.24
5	Chemicals.....	34.36	1.72	2.56	2.64	3.06
512	Organic chemicals.....	1.13	39.24	46.13	62.03	58.37
513	Inorganic elements, etc.....	4.58	1.66	2.41	2.82	2.78
514	Other inorganic chemicals.....	2.74	5.88	6.89	6.85	8.63
518	Dyeing and tanning extracts, incl. synthetic.....	7.71	3.21	6.52	4.12	7.15
532.4	Tanning extracts of vegetable origin.....	7.67	7.19	6.52	6.37	7.09
533	Pigments, paints, varnishes, etc.....	1.03	64.2	6.42	6.23	7.09
541	Medicinal, pharmaceutical products.....	1.78	1.27	1.84	2.21	4.91
55	Essential oils, perfume materials, etc.....	1.26	2.83	3.32	3.73	1.27
561	Fertilizers, manufactured.....	1.55	1.89	2.99	1.43	4.28
571	Explosives and pyrotechnic products.....	7.00	7.35	7.75	7.42	7.68
581	Plastic materials.....	5.16	5.26	5.60	4.96	5.15
589	Chemical materials and products, n.e.s.....	4.75	5.10	6.03	3.07	5.88

See footnotes at end of table.

EXPORTS BY COMMODITIES ACCORDING TO THE STANDARD INTERNATIONAL TRADE CLASSIFICATION, REVISED.—Continued
 [Weight in thousand metric tons; value in million rands]

SITC code	Commodity	1965		1966		1967		1968		1969 #	
		Value	Weight	Value	Weight	Value	Weight	Value	Weight	Value	Weight
	General exports f.o.b.										
6	Manufactured goods classified by material	278.35		387.21		423.54		461.40		507.99	
61	Leather and manufactures, n.e.s.	7.70		9.93		5.73		6.13		1.27	
62	Rubber manufactures, n.e.s.	3.87		5.15		2.98		3.28		4.59	
629.1	Rubber tires and tubes	1.75	2.5	2.67	2.7	2.98	3.0	3.28	1.9	1.89	
63	Wood and cork manufactures	7.45		9.90		10.95		12.52		12.87	
64	Paper, paperboard and manufactures	5.19		7.17		7.66		8.86		8.95	
641	Paper and paperboard	4.96		6.31		6.93		7.66		8.95	
65	Textile yarn and thread	1.66		2.84		3.25		3.63		3.93	
651	Textile yarn and thread	1.66		2.84		3.25		3.63		3.93	
66	Non-metallic mineral manufactures, n.e.s.	128.70		159.20		163.46		199.70		225.49	
661	Precious, semiprecious stones, pearls &	124.47		158.93		156.88		191.88		218.06	
667	Diamonds, rough and uncut	94.36	2,630.3	121.70	2,776.5	116.59	3,214.2	140.76	3,434.6	152.40	
	Diamonds, cut and polished	29.02	174.7	36.27	184.7	39.08	224.6	49.72	255.4	64.64	
67	Iron and steel	52.17		71.43		77.18		75.94		97.13	
671	Pig and sponge iron including powder	39.41		51.36		53.72		47.82		55.57	
671.2	Pig iron	16.41	769.9	21.23	933.5	27.07	829.5	24.07	611.8	17.86	
671.4	Ferro-manganese	12.02	156.9	12.78	127.8	10.36	109.6	10.87	254.0	20.39	
671.5	Ferro-chromium	9.29	105.6	16.92	119.7	16.17	95.0	12.83	135.5	17.22	
673	Iron and steel bars, rods, etc.	2.59		5.37		4.25		5.05		8.68	
674	Universal, plates and sheets of iron or steel	4.10		7.51		10.26		11.98		19.66	
676	Rails and railway track construction material	6.2		1.18		1.89		2.77		2.95	
678	Tubes, pipes and fittings of iron or steel	4.09		4.32		5.23		5.91		4.82	
68	Non-ferrous metals	71.60		114.07		141.46		140.96		138.90	
681	Silver and platinum group metals	2.44		7.40		6.93		5.90		4.43	
681.1	Silver, unworked or partly worked	2.38	368.0	7.27	347.6	6.93	127.8	5.90	118.5	4.41	
682	Copper	52.34		89.80		117.52		117.22		109.31	
682.1	Copper and alloys, worked	51.26	121.7	87.08	147.7	113.37	142.9	110.33	118.6	106.48	
683	Nickel	1.34		1.71		2.31		4.56		8.14	
684	Aluminum	1.03		1.29		1.36		1.63		1.80	
685	Lead	12.31		11.28		9.88		8.00		10.79	
685.1	Lead and alloys, unwrought	12.28	59.9	11.27	65.6	9.85	48.9	7.93	54.5	10.73	
689.5	Manganese	1.85	6.1	2.56	8.3	3.31	8.4	3.49	9.6	4.21	

69	Manufactures of metals, n.e.s.	11.51	12.74	13.81	16.20
693	Wire products and fencing grills	1.43	1.78	1.97	2.27
695	Tools for use in the hand or in machines	1.71	1.93	2.28	3.13
698	Manufactures of metals, n.e.s.	3.24	3.87	4.45	4.81
7	Machinery and transport equipment	62.59	75.34	91.00	99.48
71	Machinery, other than electric	36.15	41.74	49.92	58.36
711	Agricultural machinery	3.10	4.09	4.35	5.36
712	Machines for special industries	9.28	11.50	13.09	16.10
718.4	Construction and mining machinery, n.e.s.	6.28	8.16	9.20	13.30
719	Machinery and appliances, n.e.s.	18.81	20.24	25.31	27.14
719.2	Pumps and centrifuges	3.15	3.70	5.20	6.07
719.3	Mechanical handling equipment	3.13	2.89	4.03	4.95
72	Electrical machinery and appliances	9.38	11.84	15.62	16.70
722	Electric power machinery	3.51	4.28	5.97	6.49
722.2	Switchgear	2.37	2.65	3.69	4.63
723	Equipment for distributing electricity	1.40	1.81	1.92	1.91
729	Other electrical machinery	2.52	3.07	3.47	3.92
73	Transport equipment	17.06	21.76	25.46	24.43
731	Railway vehicles	2.06	1.95	1.62	3.92
732	Road motor vehicles	12.34	15.72	17.38	14.27
732.3	Lorries and trucks	4.74	4.13	4.13	2.21
8	Miscellaneous manufactured articles	18.62	19.62	16.85	17.48
812	Sanitary, plumbing, heating fixtures, etc.	.75	.94	1.31	1.16
841	Clothing	2.95	2.34	1.42	1.35
841.1	Clothing of textile fabrics, not knitted	1.90	1.34	.60	.55
851	Footwear	1.80	2.79	.89	.46
86	Instruments, photographic supplies, etc.	4.53	4.88	5.17	7.43
861	Instruments, etc.	3.48	3.63	3.23	4.84
89	Manufactured articles, n.e.s.	7.19	7.31	7.05	6.60
892	Printed matter	1.77	3.63	2.79	1.87
9	Commodities and transactions, n.e.s.	47.13	58.62	70.30	92.12
911	Postal packages	2.33	2.58	2.73	4.22
931	Special transactions, n.e.s.	26.71	51.93	62.96	87.70

¹ For comparable figures in the years beginning 1960, see issues of this Yearbook beginning with that of 1963; for imports and exports in the years 1957-59, according to the original SITC, see the 1960 issue of this Yearbook.

² Exclude settlers' effects.

³ Includes synthetic diamonds, classified by the SITC in subgroup 667.4, in thousand carats: 1965, 775.2; 1966, 2,487.1; 1957, 1,971.8; 1968, 2,799.0; in million rands: 1965, 0.39; 1966, 1.25; 1967, 2.21; 1968, 3.57.

⁴ Quantities are in gross weight. The metal content of the ore exported is approximately 60 per cent.

⁵ Quantities are in gross weight. The metal content of the ores and concentrates is not available.

⁶ Quantities are in gross weight. The metal content of the ore exported is approximately 41 percent.

⁷ Quantities are in gross weight. The metal content of the ore exported is approximately 45 percent.

⁸ Excludes synthetic diamonds, see footnote ³.

⁹ Carats (thousands).

¹⁰ Number.

¹¹ Metric tons.

Source: United Nations: Yearbook of International Trade Statistics.

SOUTH AFRICA TRADE BY COMMODITY GROUPS (SITC)

[in rand millions]

Category	Imports (f.o.b.)		Exports (f.o.b.)	
	1970	1971 (January to April)	1970	1971 (January to April)
0 Food and livestock.....	103	34	302	73
1 Beverages and tobacco.....	26	6	14	3
2 Inedible raw materials excludes fuels.....	120	40	351	104
3 Mineral fuels and lubricants.....	126	60	81	31
4 Animal and vegetable oils and fats.....	12	4	9	3
5 Chemicals.....	200	73	63	21
6 Manufactured goods classified chiefly by material.....	496	187	472	137
7 Machinery and transport equipment.....	1, 186	464	113	41
8 Miscellaneous manufactured articles.....	225	82	18	6
9 Unclassified.....	48	15	112	39
Total.....	2, 540	964	1, 534	459

Source: South Africa, Bulletin of Statistics.

Mr. DIGGS. I would like to close out our interrogation here, unless my colleague has some other questions, by taking note of the Department's recognition that there is a very real question as to whether taxes imposed and collected by the illegal authority of the South African government of income earned in Namibia comes within the statutory provision of the tax code on foreign tax credit.

I would like the Department to inform the committee in the form of findings in this regard. I think that is very significant. Reference that.

Mr. PETTY. I would be happy to.

Mr. DIGGS. Would you care to give any comments on it?

Mr. PETTY. No, our international tax people are examining this.

Mr. DIGGS. When do you expect an answer on that?

Mr. PETTY. I would think by New Year, or shortly after that, January.

Mr. DIGGS. As you may know, Mr. Secretary, I was up at the U.N. this fall, and I am very much enthralled with the implications of many of these questions as it relates to our role in the family of nations. I know that the General Assembly Resolution 2145 which terminated South Africa's mandate in Namibia raises a lot of questions.

I would like to know, for example, how much money per year has been taken as credits against U.S. income tax payments to the South African administration of Namibia.³⁴

Mr. PETTY. I can give you the maximum detail we have. The particular detail you ask would be recorded or could be obtained in the form you requested.

Mr. DIGGS. Fine. I would appreciate that and would like to get documentation on this by year from 1966 up through the end of the fiscal 1971, so that we can see what the loss is to our taxpayers because of the allowance of these credits.

Mr. PETTY. Judging from our experience, the tabulation of our foreign tax credit is lagging several years. A serious statistical shortage, I might say, in terms of analysis for tax policy.

Mr. DIGGS. Do you know anything about double tax agreements involving South Africa, Namibia, Mozambique and Angola?

³⁴ Ibid.

Mr. PETTY. I do not. We don't have it available now. We could develop the information.

Mr. DIGGS. Documentation of that.

(The information requested follows:)

The United States has an income tax treaty, signed in 1946, with South Africa. This treaty is not considered by the United States or, to the best of our knowledge, by the Union of South Africa as applying to Namibia. The United States also has an estate tax treaty with South Africa which was signed in 1947. This treaty does not apply to Namibia.

The United States has no tax agreements involving Mozambique or Angola.

The U.S.-South Africa income tax treaty has a more limited scope than most of our treaties and as a result, confers more limited benefits. A substantial part of the benefit of most treaties arises out of the reductions provided for in withholding tax rates by the country of source of dividend, interest and royalty income. The U.S.-South Africa treaty provides no such rate reductions and statutory rates apply in both countries.

The estate tax treaty between the United States and South Africa establishes uniform rules for taxing estates. It is similar to our other estate tax treaties and provides no special benefits.³⁵

Mr. DIGGS. Any special tax dispensations received by our Government?

Mr. PETTY. Not that I am aware of, no, sir.

Mr. DIGGS. Any U.S. firms given any investment incentives of any kind in South Africa? ³⁶

Mr. PETTY. There could well be a policy like our own Appalachian program. We, upon occasion, try to stimulate jobs in a given community and have either State, local, or Federal programs to one extent or another, and most countries have them.

I can share what information we can gather on that.

Mr. DIGGS. We recognize that the cheap labor supply is a good incentive but we are curious as to whether or not there are any other incentives.

Mr. PETTY. I would add the job creation motivation is fairly strong in most economies, and whether the labor rate is less there than in India is something I just don't know.

Mr. DIGGS. Any final questions from the gentleman from Michigan?

Mr. VANDER JAGT. Yes, thank you, Mr. Chairman.

You have got such a mass of information to cope with.

Mr. PETTY. I have myself tied up for a year.

Mr. VANDER JAGT. It sounds that way with the flow of investment and assets. I almost apologize for quibbling with you over one little comma.

Also I would like to express my appreciation for the cooperativeness that you demonstrated and your willingness to cooperate and get the material that we need.

Mr. DIGGS. My associate and myself.

Mr. VANDER JAGT. I also am fully aware that you can't know the nuance of every statute that is related to the Department of the Treasury, so I will say, before you respond to my question or my remarks, feel free to consult with legal counsel. I do think the comma is important because it is in a statute of title 19, the Blaine amendment on

³⁵ Copies of the two treaties are inserted on p. 538 of the appendix.

³⁶ As of this date, no reply has been received from the Department of the Treasury. It is hoped that the Department will supply the information requested which will then appear in Part III of these hearings.

which we had a legal analysis presented here yesterday. And if that legal analysis is correct, we have something close to \$1,700 million worth of goods being imported every year that are illegal. And you tell us in your judgment that, well, no, that statute is only talking about prison labor—and you say it really only means prison labor because of a comma—under penal sanctions.

Mr. PETTY. I say that subject to legal support.

Mr. VANDER JAGT. But the statute says that none of these goods shall come in if they are produced by convict labor and/or forced labor or/and indentured labor under penal sanction.

Now, I could argue about the comma and the phrase “under penal sanctions,” that it refers not to people already imprisoned, but rather to the possibility a man will be put in prison if he breaches the contract.

Also I do not know if this would apply to convict labor because it is kind of hard to threaten a man already in jail that, if he does not obey, you are going to put him in prison. But fortunately we don't have to quibble about that because we have a definition of what the statute means by forced labor.

The statute says, “Forced labor as herein used shall mean all work or services exacted from any person under the menace of any penalty for each nonperformance.”

In other words, I think you are just dead wrong when you say that the statute is talking only about prison labor. And if you are dead wrong on that point, it means that 90 percent of the statute just is not being administered. And it says that the Secretary of the Treasury is directed to proscribe such regulations as may be necessary for the enforcement of this provision. So I know there should be an answer; but I personally think that your answer—that it is only talking about prison labor because of that comma—is just dead wrong.

Mr. PETTY. Congressman, you want a considered Treasury opinion on that; you don't want an offhand remark from me.

Mr. VANDER JAGT. Of course, I understand.

Mr. PETTY. I will speak to the general counsel and review the legislative history as well as the word of the statute and all that goes into it and respond to you on that point.⁸⁷

Mr. VANDER JAGT. That would be very helpful and I think it is quite important.

Mr. PETTY. Very germane, no question about it.

Mr. DIGGS. Does counsel have any questions?

Mrs. BUTCHER. Yes, Mr. Chairman.

I would like to go back just one moment, if I may, to a question yesterday that was put in connection with the Homelands, an investment in the Homelands. Yesterday it was shown that in the first investment in the first Homeland industry the wages paid there were very low, the fringe benefits were very low, so that the question immediately came up—should investment go there?

I believe it may well be much more complex than that and I would like to have the benefit of Mr. Gervasi's comment on it while he is still here.

⁸⁷ The material submitted by the Department of the Treasury, which appears on p. 193, addresses this point.

Mr. GERVASI. I think the question of Bantustans, or Homelands, is bound to arise as South Africa makes the pretense of moving toward political independence for these areas. It would seem to me that if there is not going to be real political independence given to the Homelands, and there are very simple criteria by which to judge this, then it would perhaps be a mistake for anyone, any foreign investor, to consider investing in the Bantustans because what that would mean simply would be that foreign investors would be in the position of assisting the South African Government to create conditions in the Bantustans which might be more manageable politically.

Of course the great problem of the Bantustans is that there is massive unemployment, that most people are living at or below the level of subsistence; in short, that they are poor.

The world wants to see that situation changed. If the foreign investors go into the Bantustans, then they will be underwriting in a most flagrant way the strength of the apartheid regime and will be cooperating in fact in the systematic oppression of the mass of population in South Africa.

So, under those circumstances, it would make very little sense for foreign investors to consider such a proposition. For the situation is inherently unstable. Any government that chooses that way to influence their choice should consider the consequences.

In the event that these countries, these Homelands, should be able somehow to move toward real political independence, then that question should be considered an open question. What that means really is that the offer of foreign investment in those areas which is now being discussed fairly widely can be used as a stick to push the South African Government toward change, or wider degrees of political independence in these areas. I don't think that any substantial concessions should ever be made by governments or corporations short of real political independence for those areas.

But since the South African Government wants foreign investment in the Bantustans, one is in a very strong position on the outside. I think it would be a terrible mistake to be gone into what is essentially a propaganda move to agree to allow and facilitate foreign investment in any of those foreign countries if their condition is not to change, if all that will happen is that a few flags and a few other things are going to be changed. That would be a terrible thing to inflict on the people of South Africa.

Mr. DIGGS. Did you have some response?

Mr. PETTY. No. I was just educating myself.

Mrs. BUTCHER. May we request documentation on the convict labor in the fruit cases?

Mr. PETTY. Yes.

Mr. DIGGS. Can that be supplied?

Mr. PETTY. Detailed on the deciduous peach case.

Mrs. BUTCHER. Yes.

Mr. PETTY. Absolutely.

(See p. 551 of the Appendix for this documentation.)

Mr. DIGGS. The subcommittee stands adjourned subject to the call of the Chair.

(Whereupon, at 4:25 p.m., the subcommittee adjourned, subject to call of the Chair.)

APPENDIXES

APPENDIX 1

EXCHANGE OF LETTERS BETWEEN CHAIRMAN DIGGS AND THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION REGARDING EMPLOYMENT PRACTICES AND STANDARDS WITH RESPECT TO THE NASA TRACKING STATION IN SOUTH AFRICA ¹

MAY 26, 1971.

MR. GERALD M. TRUSYNSKI,
Associate Administrator for Tracking and Data Acquisition, National Aeronautics and Space Administration, Washington, D.C.

DEAR MR. TRUSYNSKI: This letter confirms the telephone conversation of May 24 between Mrs. Butcher, the subcommittee consultant, with Mr. Gerald Mossinghoff of your staff, concerning your appearance before the Subcommittee on Africa, June 2 at 3 p.m.

For your background information I am enclosing my statement at the opening of the hearings. This indicates that a basic purpose of the hearing is to explore U.S. business practices in Southern Africa and to obtain as full information as possible on all pertinent aspects of this question.

In considering U.S. Government policies and their implementation with respect to private businesses in southern Africa, we believe it would be helpful to be informed on employment policies and standards with respect to the tracking stations as well as on the actual policies which are practiced at the stations, both those with regard to the CSIR administration of the stations and with regard to any NASA personnel who may be assigned to the tracking stations.

We would need 75 copies of your testimony, at least 48 hours in advance of your appearance before the subcommittee. The hearing will take place in room 2200 of the Rayburn House Office Building.

I appreciate your cooperation and look forward to your appearing before the subcommittee next week.

Sincerely yours,

CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa.

JUNE 10, 1971.

Dr. GEORGE M. LOW,
Acting Administrator, National Aeronautics and Space Administration, Washington, D.C.

DEAR DR. LOW: I wish to express the deep concern with which I view the total lack of responsiveness by the agency which was represented by Mr. Trusynski in his appearance before the subcommittee on June 2 in its present hearings on U.S. involvement in southern Africa. The agency had been advised in my letter of May 26 of the thrust of our inquiries as follows:

"In considering U.S. Government policies and their implementation with respect to private businesses in southern Africa, we believe it would be helpful to be informed on employment policies and standards with respect to the tracking stations as well as on the actual policies which are practiced at the stations, both those with regard to the CSIR administration of the stations and with regard to any NASA personnel who may be assigned to the tracking stations."

¹ Portions of some of the letters have been deleted having no relation to employment practices and standards in South Africa.

In addition, Mrs. Goler T. Butcher, consultant to the subcommittee in conversation with Mr. Mossinghoff of your Congressional Liaison Office had cited specific examples of the type of factual information sought by the subcommittee. Further, after reading the prepared statement on the morning of June 2, I personally advised NASA that the statement did not meet the subcommittee's need for factual data on employment policies at the station.

I trust that you will personally see to it that the subcommittee receives full and complete responses to the questions put to Mr. Truszynski during the hearings.

Sincerely yours,

CHARLES C. DIGGS, JR.,
Chairman, Subcommittee on Africa.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
Washington, D.C., June 16, 1971.

HON. CHARLES C. DIGGS, JR.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This responds to your letter of June 10 regarding Mr. Truszynski's appearance before your subcommittee on June 2.

We regret that Mr. Truszynski's statement presented to your subcommittee failed to meet your needs for specific information. In the absence of a list of specific questions, we failed to anticipate the level of detailed information regarding activities of the South African Council for Scientific and Industrial Research desired by your subcommittee, as reflected in the specific questions asked of Mr. Truszynski during the hearings. Further, the timing of Mr. Truszynski's appearance did not permit him sufficient time to be prepared to answer questions which involved information not available without going to sources outside of NASA. I understand that Mr. Mossinghoff explained this to Mrs. Butcher both before and after your call on June 2 and that it was agreed that, with respect to any questions Mr. Truszynski could not answer at the hearing, we would attempt to provide answers for the hearing record.

We are attempting to gather the information requested of Mr. Truszynski at the hearing, and as soon as we have examined the transcript of the hearing, which we received today, we will address the specific questions asked.

Sincerely yours,

GEORGE M. LOW,
Deputy Administrator.

NOVEMBER 1, 1971.

HON. JAMES C. FLETCHER,
Administrator, National Aeronautics and Space Administration, Washington, D.C.

DEAR DR. FLETCHER: This is to confirm the request made during my visit to the NASA Tracking Station on August 18 in South Africa, and reconfirmed at the hearing on September 27, that NASA submit a completed questionnaire (a copy of which is enclosed), adapted as necessary to your position as a government agency rather than a U.S. firm. I am particularly concerned that the questionnaire be filled out since the data presented by NASA on wages is completely inadequate.

I would appreciate being kept apprised of the developments with respect to the NASA factfinding mission to the tracking station in South Africa.

Sincerely,

CHARLES C. DIGGS, JR.,
Chairman, Subcommittee on Africa.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
Washington, D.C., November 24, 1971.

HON. CHARLES DIGGS, JR.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This is to inform the subcommittee that I plan to visit the NASA tracking station in South Africa with Mr. Gerald M. Truszynski, Associate Administrator for Tracking and Data Acquisition, at the end of this month.

I believe my visit to the tracking station will give me a better firsthand understanding of the situation there.

We are addressing the questions in the questionnaire which you sent us to respond to those questions which are applicable to the activities at the NASA tracking station in South Africa. As you know, much of the content of the questionnaire was answered at the time of my appearance before the subcommittee on September 27 and, as you suggest, a number of the questions are inapplicable to the activities of a Government agency such as NASA. Since the station is operated and staffed for NASA by the South African Council for Scientific and Industrial Research, we must again turn to that agency for much of the additional information called for by the questionnaire. As soon as we have obtained further information, we will provide you with a completed questionnaire to the extent feasible.

Sincerely,

WILLIS H. SHAPLEY,
Associate Deputy Administrator.

JANUARY 20, 1972.

CONGRESSIONAL LIAISON OFFICE,
National Aeronautics and Space Administration,
Washington, D.C.

GENTLEMEN: * * * I am reminded as I refer to the above that I have not received a report on the results of your agency's on-the-ground investigation of my charges that the South African installation practices apartheid. I am particularly interested in knowing what your agency's intentions are with respect to this nefarious practice.

Sincerely,

CHARLES C. DIGGS, Jr.,
Member of Congress.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
Washington, D.C., February 9, 1972.

HON. CHARLES C. DIGGS, Jr.,
House of Representatives,
Washington, D.C.

DEAR MR. CHAIRMAN: * * * With respect to the tracking station in South Africa, we have initiated, and are continuing, discussions with the South Africa Council for Scientific and Industrial Research. These discussions are proceeding in a positive manner, we feel, in exploring what may be done to improve the working and living conditions, and opportunities for nonwhites at the NASA station within the authority available to both NASA and the CSIR. We intend to advise you of the results of these discussions as soon as we have reached agreement on actions proposed by both NASA and CSIR relating to these matters.

Sincerely,

H. DALE GRUBB,
Assistant Administrator for Legislative Affairs.

FEBRUARY 18, 1972.

MR. H. DALE GRUBB,
Assistant Administrator for Legislative Affairs, National Aeronautics and Space Administration, Washington, D.C.

DEAR MR. GRUBB: * * *. With regard to your discussion with the South African Council for Scientific and Industrial Research, there seems to be an inordinate delay in bringing this matter to some conclusion. Perhaps I could understand the reason for this delay if you would provide me with a copy of all reports and correspondence between the Council and your agency, since this matter was raised at my subcommittee hearing several months ago.

I look forward to receiving said documents as soon as possible.

Sincerely,

CHARLES C. DIGGS, Jr.,
Member of Congress.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
Washington, D.C., March 9, 1972.

Hon. CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of
Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: This letter is in accordance with my undertaking to advise you of developments relating to the tracking station in South Africa and also responds to your letter to Mr. Grubb of February 18, 1972.

As indicated in my testimony to the subcommittee last fall, NASA has been working with the South African authorities to attempt to bring about improvements, within the existing framework in South Africa, in the working and living conditions, and opportunities, of nonwhite employees at the tracking station near Johannesburg.

Discussions with the Council of Scientific and Industrial Research (CSIR), the agency of the South African Government responsible for operating the tracking station, were begun last fall in Washington and continued during the visit Mr. Truszynski and I made to the station early in December. Subsequent internal consideration on the South African side has now reached the point where I can report on the understandings NASA has reached with the CSIR to pursue certain activities aimed at accomplishing needed improvements. These understandings, as now confirmed by CSIR on February 28, 1972, are summarized in the enclosure.

NASA will continue to urge CSIR to proceed as promptly as possible in effecting the improvements contemplated in these understandings and will provide all practicable assistance within the scope of our authority.

Sincerely,

WILLIS H. SHAPLEY,
Associate Deputy Administrator.

Enclosure.

SUMMARY OF UNDERSTANDING BETWEEN NASA AND CSIR CONCERNING ACTIVITIES TO BE UNDERTAKEN AT THE NASA TRACKING STATION IN JOHANNESBURG, SOUTH AFRICA

1. *Provision of improved housing for nonwhite employees onsite.*—Upon initial establishment of the station, a number of houses (10) were constructed on the station site to provide for the complement of nonwhite employees anticipated at the time. As the level of activity at the station increased, additional nonwhite personnel residing in housing which existed on the site when it was originally acquired were employed. Additional new housing was not provided and the pre-existing houses are not equivalent standards to those supplied during original station construction. CSIR and NASA plan to provide additional improved housing sufficient for the total complement of nonwhite employees.

2. *Improvement of facilities for primary education by construction of schooling facilities onsite.*—Currently, children of nonwhite employees attend either of two primary schools located some 5 kilometers from the station. Transportation is not provided. While transportation could be furnished, it is felt that more convenient and effective schooling facilities could possibly be provided by making special provision for school accommodation which would be available solely for the children of station personnel. CSIR is thus investigating the possibility of constructing and operating primary schooling facilities onsite or in the immediate vicinity for the children of nonwhite employees.

3. *Community facilities.*—There is also a need for a social center and community hall for nonwhite employees residing at the station. The school facility discussed above could probably also serve this purpose and, in addition, be used for adult education activities.

4. *Assistance for advanced schooling.*—Secondary schools for nonwhite students are not available locally nor are they within reasonable daily traveling distance from the station. As a result, students attending secondary schools must do so in residence at such schools. This, of course, entails expense to the family which may preclude the pursuit of secondary education by prospective students. In order to provide the maximum opportunity for children of the nonwhite station staff to obtain secondary schooling and thereby prepare themselves as fully as possible for advanced employment opportunities, NASA and CSIR are investigating a plan for financial support for secondary schooling for children of the nonwhite station staff.

5. *Provision of facilities for midday meals for nonwhite employees.*—Originally, a lunch facility for nonwhite employees was not provided inasmuch as the initial nonwhite staff lived close enough to the station to have their midday meal at home. However, with the expansion of staff the need for an eating facility is recognized. CSIR is planning the expansion of cafeteria/kitchen facilities to provide midday meals for those nonwhite employees who would prefer not to eat at home.

6. *Provision of medical services.*—There are presently no medical clinic or dispensary facilities available on the site for either white or nonwhite personnel. CSIR and NASA are taking steps to provide a facility for this purpose by conversion of an existing building. This facility will also cater for those needs of the nonwhite families resident at the station which do not call for hospital or specialist medical attention for which transportation to the Provincial hospital, some 20 miles away, is available at all times.

APRIL 24, 1972.

Hon. WILLIS H. SHAPLEY,
Associate Deputy Administrator, National Aeronautics and Space Administration,
Washington, D.C.

DEAR MR. SHAPLEY: Thank you for your letter of March 9.

Upon reviewing your testimony of September 27 concerning NASA's operations in South Africa, and the earlier testimony of Mr. Truszynski, I find that certain important questions raised have still not been answered. I would appreciate responses to the following previously raised questions as soon as possible:

1. I wish to know the figures on comparative wage increases over the years among races. This can be computed despite the fact that whites and blacks do not hold the same type of jobs, as you observed.

2. Since 1961, what percentage of the total employees has been African, and what percentage of the total wages has been paid to Africans?

3. Are CSIR's South African officers formally advised of the official U.S. Government posture on discrimination and majority rule in South Africa? If so, how? Similarly, are U.S. personnel visiting the station formally advised of official U.S. policy? If so, how?

4. I still wish to obtain from CSIR a complete statement on the legal applicability of South African apartheid laws, including job reservations, wage regulations, and segregation requirements, to the tracking facilities, and specifically whether certain laws designed for business firms, such as those empowering the requirement of segregated facilities—that is, the Factories, Machinery, and Building Works Act of 1941, as amended—are applicable to this noncommercial enterprise.

5. Are facilities still segregated at NASA?

6. If so, what would happen if NASA required the immediate desegregation of all facilities at its tracking station?

7. No response to the questionnaire on employment practices has been submitted as was promised. We would appreciate receiving this promptly.

8. Has CSIR ever contributed to the South African Foundation?

9. Have any black personnel of NASA or the Jet Propulsion Laboratory visited the facilities in South Africa since September?

10. What further consideration is being given to an expansion of our facilities on Madagascar as replacement for the South African stations?

In your March letter you described an understanding with the CSIR to investigate several possible improvements at the facility. At this time, can you tell me which of these are actually being implemented? Specifically:

1. Is new, improved housing for nonwhites being constructed?

2. Are primary school facilities being constructed onsite? I would appreciate being further specifically informed on the proposed funding of costs—tuition, books, et cetera—and provision of teachers for this school. I feel this is a particularly important area for immediate action, since I understand that a child has been killed crossing the road while en route to school. In the meantime, before a local primary school is constructed, is NASA providing transportation to school for primary students?

3. Are plans for a social center for employees being actively pursued?

4. Have NASA and CSIR actually decided to provide financial support for the secondary schooling of children of nonwhite staff? If so, will it be complete support covering both tuition and living costs?

5. Are cafeteria and kitchen facilities for nonwhite employees' lunches being provided?

6. Have steps been taken to provide medical services onsite?

7. Has NASA actually provided any funds or assistance, directly or indirectly, to support higher training or education for African employees? For their children? For white employees? For their children?

8. I would appreciate information on the numbers, age levels, and grades in school of the children of all employees of all races at the facility.

I hope you will be able to gather the above information as soon as possible.

Thank you for your consideration.

Sincerely,

CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa.

JUNE 27, 1972.

HON. CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: In further response to your letter of April 24 to Mr. Shapley, I am enclosing answers to the questions you asked, with the exception of Nos. 1, 2 and 4 on page 1 of your letter and question No. 8 on page 3.

We will reply further to your letter when the information needed to respond to the unanswered questions is available.

Sincerely,

H. DALE GRUBB,
Assistant Administrator for Legislative Affairs.

Question 3. Are CSIR's South African officers formally advised of the official U.S. Government posture on discrimination and majority rule in South Africa? If so, how? Similarly, are U.S. personnel visiting the station formally advised of official U.S. policy? If so, how?

Response. Not by NASA, but U.S. policy on these issues has been made clear by the Department of State. U.S. personnel visiting the station are advised by NASA of the prevailing situation in briefings prior to their departure, or on arrival by the JPL representative, as a standard operating practice.

Question 5. Are facilities still segregated at NASA?

Response. Some facilities at the Johannesburg Tracking Station, operated for NASA by CSIR, remain segregated.

Question 6. If so, what would happen if NASA required the immediate desegregation of all facilities at its tracking station?

Response. NASA has no authority to "require" the South African Government to desegregate facilities they operate in their country.

Question 7. No response to the questionnaire on employment practices has been submitted as was promised. We would appreciate receiving this promptly.

Response. This response was forwarded by Mr. Grubb's letter of June 1, 1972, to Chairman Diggs.

Question 8. Has CSIR ever contributed to the South African Foundation?

Response. We understand that the South African Foundation accepts contributions only from non-government donors.

Question 9. Have any black personnel of NASA or the Jet Propulsion Laboratory visited the facilities in South Africa since September?

Response. No.

Question 10. What further consideration is being given to an expansion of our facilities on Madagascar as replacement for the South African stations?

Response. The characteristics of the missions supported by the Johannesburg Station are such that the mission trajectories would not be visible to a station in Madagascar and therefore no active consideration is being given to expanding the facilities on Madagascar as a replacement for the South African Station.

Question 1. Is new, improved housing for nonwhites being constructed?

Response. Building plan and fund determination phases are near approval and construction by CSIR is expected to start soon.

Question 2. Are primary school facilities being constructed onsite? I would appreciate being further specifically informed on the proposed funding of costs (tuition, books, etc.) and provision of teachers for this school. I feel this is a particularly important area for immediate action, since I understand that a child

has been killed crossing the road while enroute to school. In the meantime, before a local primary school is constructed, is NASA providing transportation to school for primary students?

Response. CSIR is investigating alternative ways to meet the schooling need to determine the one most beneficial to the students. These include transportation to urban schools. In the meantime, CSIR has arranged to transport the students to the existing primary school.

Question 3. Are plans for a social center for employees being actively pursued?

Response. Yes, but final building design will depend on whether schooling needs will be met at the station.

Question 4. Have NASA and CSIR actually decided to provide financial support for the secondary schooling of children of nonwhite staff? If so, will it be complete support covering both tuition and living costs?

Response. NASA and CSIR plan to provide financial support for secondary schooling of children of nonwhite staff. Costs of this financial arrangement are currently being investigated by CSIR.

Question 5. Are cafeteria and kitchen facilities for nonwhite employees' lunches being provided?

Response. Kitchen facilities provide hot lunches for both white and nonwhite employees. Cafeteria facilities for nonwhite employees are not yet available.

Question 6. Have steps been taken to provide medical services onsite?

Response. Dispensary services as described in the attachment to Mr. Shapley's letter of March 9, 1972, are being established.

Question 7. Has NASA actually provided any funds or assistance, directly or indirectly, to support higher training or education for African employees? For their children? For white employees? For their children?

Response. NASA does not provide any support for higher training or education for employees of the station or their children; however, CSIR trainees working at the station are compensated when engaged in such work.

APPENDIX 2

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION CONTRACTS AND AGREEMENTS WITH THE COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH IN SOUTH AFRICA REGARDING THE NASA PROGRAMS IN SOUTH AFRICA AS WELL AS THE AGREEMENT BETWEEN THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF THE UNION OF SOUTH AFRICA CONCERNING TRACKING STATIONS

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION NEGOTIATED CONTRACT

(Contract No. NASw-156, April 1, 1960)

Issuing office.—National Aeronautics and Space Administration, 801 19th Street NW., Washington, D.C.

Contractor.—Council for Scientific and Industrial Research, Post Office Box 395, Pretoria, Union of South Africa. Contract for services in connection with the NASA deep space exploration program. Amount, \$40,000.

APPROPRIATION AND OTHER ADMINISTRATIVE DATA

Control number.—GS-384.

Type of contract.—Cost-reimbursement.

Administration by.—National Aeronautics and Space Administration, room 111, 801 19th Street NW., Washington, D.C.

Appropriation and allotment chargeable.—Supporting Activities—1960 R. & D.—GSFC (Headquarters) 80X0108(60).

Office to make payments.—Fiscal officer, Goddard Space Flight Center, Building T-28, Anacostia Naval Station, Washington, D.C. Attention: Mr. Probst.

This negotiated contract is entered into pursuant to the provisions of 10 U.S.C. 2304(a)(6) and any required findings and determination have been made.

This contract is entered into as of April 1, 1960, by and between the United States of America, hereinafter called the U.S. Government, represented by the contracting officer executing this contract, and the Council for Scientific and Industrial Research, an organization existing under the laws of the Government of the Union of South Africa, hereinafter called CSIR. The parties hereto agree that CSIR shall perform all the services set forth in the attached schedule, for the consideration stated therein.

SCHEDULE

ARTICLE I—SCOPE OF WORK

(a) CSIR will perform the following engineering services and tests for NASA at various locations in the vicinity of Johannesburg, Union of South Africa:

(1) Electrical noise and interference measurements. These will determine the areas of minimum manmade and natural noise or interference, so the receiving sensitivity at the particular location can be maximized.

(2) Topographic studies. Survey, levels and photographic work are necessary to determine those areas suitable for possible site locations.

(3) Soil analysis. This will determine the type foundation that must be designed for supporting heavy structures.

(4) Such other tests as may be necessary to determine the suitability of possible sites for the NASA tracking facility.

(b) The location or locations at which the services and tests will be performed, and the details as to the kind and nature of services and tests required, will be provided to CSIR by NASA, or by the Jet Propulsion Laboratory of Pasadena, Calif.

(c) CSIR will perform the work called for herein in consultation with a representative or representatives of NASA or the Jet Propulsion Laboratory.

ARTICLE II—TIME OF PERFORMANCE

CSIR shall perform the work called for under article I hereof as expeditiously as possible and shall in any event complete it within 120 days from the date CSIR is notified by the contracting officer that this contract has been executed by the U.S. Government.

ARTICLE III—ESTIMATED COST

The estimated cost of this contract is \$40,000 which amount shall not include any fee or profit for CSIR.

ARTICLE IV—ALLOWABLE COST AND PAYMENT

(a) The U.S. Government shall pay to CSIR costs incurred under this contract and determined to be allowable as provided hereinafter. Costs shall be determined to be allowable (i) if reasonable, (ii) if actually incurred by CSIR in performance of and in conformity with the provisions of this contract, and (iii) if allocable to this contract in accordance with accounting principles and practices generally followed with respect to contracts made by CSIR with the South African Government. Subject to the above, the U.S. Government shall reimburse CSIR for the following costs:

- (1) Engineering labor.
- (2) Applicable indirect costs.
- (3) Travel and transportation, including subsistence allowance.
- (4) Rental of equipment.
- (5) Laboratory analysis costs.
- (6) Costs of subcontracts.
- (7) Costs of materials and supplies.
- (8) Costs of preparation and reproduction of reports, drawings, et cetera.
- (9) Costs of performing photographic services, data processing and analysis.
- (10) Communications (telephone, postage and telegram).
- (11) Cartography.
- (12) Any other proper costs incurred or expenditures made by CSIR pursuant to any of the provisions of this contract or directed or approved by the Contracting Officer, except such costs as arise from contributions and donations, entertainment expenses, interests on borrowings and other financing charges, or losses on other contracts.

(b) Once each month, or at more frequent intervals if approved by the contracting officer, CSIR may submit to the contracting officer, in such form and reasonable detail as he may require, a voucher supported by a statement of costs incurred by CSIR in performing this contract and claimed to constitute allowable costs. Each statement of costs shall be certified by a responsible official of CSIR authorized to certify such statements.

(c) As promptly as may be practicable after receipt of each voucher by the contracting officer, the U.S. Government shall make payment thereon in accordance with the provisions of this article, subject to the limitation that the U.S. Government shall not be obligated to reimburse CSIR for expenditures in excess of the estimated cost of this contract. Payment will be made in U.S. dollars, at the rate of exchange current on the date of payment.

(d) Prior to final payment under this contract and as a condition for such final payment, the appropriate agency of the South African Government will conduct an audit of the expenditures made by CSIR and charged to this contract. It shall submit a report of such audit to the contracting officer which report shall indicate the amounts which are properly chargeable to this contract under normal accounting principles and practices of CSIR.

ARTICLE V—CHANGES AND INCREASE IN COST

The contracting officer may at any time, by written notice, make changes within the general scope of this contract in the work to be performed hereunder. Upon receipt of such notice, CSIR shall continue performance of the contract as changed. In the event an increase in the estimated cost of the contract is anticipated either by virtue of a change or otherwise, CSIR shall notify the contracting officer so as to permit the negotiation of a supplemental agreement hereto by the parties in a timely fashion.

ARTICLE VI—DATA AND INSPECTION

The U.S. Government, and CSIR with the consent of the U.S. Government, may publish, reproduce, and use, and have others so do, for any purpose, without limitation, drawings, studies, test results, technical information, and other data resulting from this contract. The U.S. Government will have the right, at all reasonable times, to inspect or otherwise evaluate the work being performed under this contract.

GENERAL PROVISIONS

1. DEFINITIONS

As used throughout this contract, the following terms shall have the meanings set forth below:

(a) The term "U.S. Government" means the Government of the United States of America.

(b) The term "South African Government" means the Government of the Union of South Africa.

(c) The term "NASA" means the National Aeronautics and Space Administration of the U.S. Government.

(d) The term "CSIR" means the Council for Scientific and Industrial Research, Pretoria, Union of South Africa.

(e) The term "Contracting Officer" means the person executing this contract on behalf of the U.S. Government and any other official or civilian employee who is a properly designated contracting officer; and the term includes, except as otherwise provided in this contract, the authorized representative of a contracting officer acting within the limits of his authority.

(f) Except as otherwise provided in this contract, the term "subcontract" includes purchase orders under this contract.

2. NOTICE OF SUBCONTRACTS

(a) CSIR agrees to notify the contracting officer in advance of any proposed cost or cost-plus-a-fixed-fee subcontract hereunder, or any fixed-price subcontract or purchase order involving more than \$25,000 or more than five percent of the estimated cost of this contract.

(b) CSIR agrees that it will not enter into any subcontracts providing for payment on a cost-plus-a-percentage-of-cost basis.

3. ASSIGNMENT OF CONTRACT OR CLAIMS

CSIR shall not assign this contract or any interest herein or any claim hereunder.

4. RECORDS

CSIR agrees to maintain books, records, documents, and other evidence pertaining to the costs and expenses of this contract to the extent necessary to properly reflect all net costs for which reimbursement is claimed under the provisions of this contract.

5. TERMINATION

(a) This contract may be terminated by the U.S. Government in whole or in part whenever the contracting officer shall determine that such termination is in the best interests of the U.S. Government. Any such termination shall be affected by delivery to CSIR at its offices of a notice of termination in writing specifying the extent to which the contract is terminated and the date or dates upon which such termination is effective. After receipt of a notice of termination, CSIR shall cease work on the effective date of termination and use its best efforts to minimize any amount due CSIR from the U.S. Government caused by such termination.

(b) CSIR and the contracting officer shall agree on the amounts to be paid as a result of a termination under this clause, and such agreement shall be evidenced by a supplemental agreement to this contract. In determining such amounts, the provisions of article IV of the schedule of this contract shall govern.

6. LABOR RELATIONS AND STANDARDS

The provisions of this contract and the performance hereunder shall be subject to and in accordance with the laws of the South African Government and any political subdivisions thereof, from time to time in effect, which govern the hours, wages, labor relations (including collective bargaining), workmen's compensation, working conditions, and other matters pertaining to labor.

7. COVENANT AGAINST CONTINGENT FEES

CSIR warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee except officers of CSIR employed for the purpose of securing business. For breach or violation of this warranty, the U.S. Government shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

8. U.S. OFFICIALS NOT TO BENEFIT

No Member of, or, Delegate to, the Congress of the United States of America, or Resident Commissioner of the United States of America shall be admitted to any share or part of this contract, or to any benefit that might arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

The rights and obligations of the parties to this contract shall be subject to and governed by the schedule and the general provisions. To the extent of any inconsistency between the schedule or the general provisions, and any specifications or other provisions which are made a part of this contract by reference or otherwise, the schedule and the general provisions shall control. To the extent of any inconsistency between the schedule and the general provisions, the schedule shall control.

In Witness Whereof, the parties hereto have executed this agreement as of the day and year first above written.

THE UNITED STATES OF AMERICA,

By _____

(Signature)*

(Contracting Officer)

COUNCIL FOR SCIENTIFIC AND INDUSTRIAL
RESEARCH,

By _____

(Signature)

(Typed Name)

(Title)

(Address)

* The contract was submitted in this manner, that is without signatures to the subcommittee.

TRACKING STATIONS

Agreement Between the
UNITED STATES OF AMERICA
and the UNION OF SOUTH AFRICA

Effected by Exchange of Notes
Signed at Pretoria September 13, 1960



UNION OF SOUTH AFRICA

Tracking Stations

*Agreement effected by exchange of notes
Signed at Pretoria September 13, 1960;
Entered into force September 13, 1960.*

*The American Ambassador to the South African Secretary for
External Affairs*

No. 80

SEPTEMBER 13, 1960.

SIR:

I have the honor to refer to the cooperative program initiated during the International Geophysical Year between our two countries under which certain facilities for space vehicles tracking and communications were jointly established and operated in the Union of South Africa for scientific purposes. In view of the resulting mutual benefits, the Government of the United States of America proposes that this cooperative program be continued and extended.

The object of such further and extended cooperation would be to facilitate space operations contributing to the advancement of our mutual scientific knowledge of man's spatial environment and its effects; the application of this knowledge to the direct benefit of man; and the development of space vehicles of advanced capabilities, including manned space vehicles.

It is proposed that the program be carried out in accordance with the following principles and procedures:

1. The program shall be conducted by Cooperating Agencies of each Government. On the part of the Government of the United States, the Cooperating Agency will be the National Aeronautics and Space Administration. On the part of the Government of the Union of South Africa, the Cooperating Agency will be the Council for Scientific and Industrial Research.

2. a. The nature and location of facilities required in the Union of South Africa for the program are as follows:

- (1) Minitrack radio tracking station presently located at Esselen Park (originally established under an arrangement of October 11,

1957, between the United States Naval Research Laboratory and the Government of the Union of South Africa). [1]

(2) Baker-Nunn camera optical tracking station presently located at Olifantsfontein (originally established in February 1958 under an arrangement between the United States National Committee for the International Geophysical Year and the South African National Committee). [1]

(3) Deep space probe radio tracking station (85 foot diameter antenna) in the vicinity of Johannesburg.

The foregoing list of facilities and locations may be amended from time to time by agreement of our two Governments.

b. The Government of the Union of South Africa will provide sites for each facility at the agreed locations at no cost to the Government of the United States; these sites to remain the property of the Government of the Union of South Africa.

3. The Government of the Union of South Africa will, in so far as practicable, prohibit the operation of radio interference-producing devices (such as power lines, industrial facilities, electric trains, primary highways, etc.) within the vicinity of sensitive radio receiving equipment.

4. In connection with each facility to be operated under the program, the Cooperating Agencies will agree upon arrangements with respect to the duration of use of the facility, the responsibility for and financing of the construction, installation, and equipping of the facility, and other details relating to the establishment and operation of the facility.

5. Each facility established may, unless otherwise agreed, be used for independent scientific activities of the Government of the Union of South Africa, it being understood that such activities would be conducted so as not to conflict with the agreed schedules of operations and that any additional operating costs resulting from such independent activities would be borne by the Government of the Union of South Africa.

6. The Government of the Union of South Africa will, upon request, take the necessary steps to facilitate the admission into the territory of the Union of South Africa of materials, equipment, supplies, goods or other items of property provided by the Government of the United States in connection with activities under this Agreement.

7. a. Title to all the aforementioned property provided by the Government of the United States for use in connection with each facility will remain in the Government of the United States.

b. If, upon terminating its use of a facility, the Government of the United States should desire to dispose of all or part of the property to which it holds title within the territory of the Union of South

¹ Not printed.

Africa, the two Governments will consult beforehand on arrangements therefor.

8. Such personal and household effects as shall have been brought into the Union of South Africa free of all taxes and duties by United States personnel, including contractor personnel, assigned to the Union of South Africa under the program, shall not be sold or otherwise disposed of within the territory of the Union of South Africa except under conditions approved by the Government of the Union of South Africa.

With reference to paragraphs 6, 7, and 8, the matter of exemption from duties, taxes and other charges will be the subject of subsequent discussion and agreement between the two Governments as to the specific categories of personnel, goods and materials to which such exemptions will apply, and the degree of exemption, if any, which will be applicable.

9. The Government of the Union of South Africa will, subject to its immigration laws and regulations, take the necessary steps to facilitate the admission into the territory of the Union of South Africa of such United States personnel, including contractor personnel, as may be assigned by the National Aeronautics and Space Administration to visit or participate in the cooperative activities provided for under this Agreement.

10. The resident directors of the facilities will be officials of the Government of the United States, and they will relay the operational directions of NASA to the South African Station Managers who will be in control of the Stations.

11. This Agreement relates to cooperation between the signatories for the peaceful uses of outer space and the facilities established shall not be used for purposes of a military nature.

12. The program of cooperation set forth in this Agreement shall, subject to the availability of funds, remain in effect for a period of fifteen years, and may be extended as mutually agreed by the two Governments. This Agreement is subject to review and possible termination in the event of either party failing to comply with the provisions of the Agreement, or in the event that either party is involved in hostilities.

If the foregoing principles and procedures are acceptable to the Government of the Union of South Africa, I have the honor to propose that this note and your note in reply shall constitute an Agreement between our two Governments to enter into force on the date of your reply.

Accept, Sir, the renewed assurances of my highest consideration.

PHILIP K. CROWE

Mr. G. P. JOOSTE,
Secretary for External Affairs,
Pretoria.

*The South African Secretary for External Affairs to the American
Ambassador*

UNIE VAN SUID-AFRIKA.
UNION OF SOUTH AFRICA.

DEPARTEMENT VAN BUITELANDSE SAKE,
DEPARTMENT OF EXTERNAL AFFAIRS,
PRETORIA.

102/1/2.

13th September, 1960.

YOUR EXCELLENCY,

I have the honour to acknowledge receipt of your Note of today's date which reads as follows:

"I have the honor to refer to the cooperative program initiated during the International Geophysical Year between our two countries under which certain facilities for space vehicles tracking and communications were jointly established and operated in the Union of South Africa for scientific purposes. In view of the resulting mutual benefits, the Government of the United States of America proposes that this cooperative program be continued and extended.

The object of such further and extended cooperation would be to facilitate space operations contributing to the advancement of our mutual scientific knowledge of man's spatial environment and its effects; the application of this knowledge to the direct benefit of man; and the development of space vehicles of advanced capabilities, including manned space vehicles.

It is proposed that the program be carried out in accordance with the following principles and procedures:

1. The program shall be conducted by Cooperating Agencies of each Government. On the part of the Government of the United States, the Cooperating Agency will be the National Aeronautics and Space Administration. On the part of the Government of the Union of South Africa, the Cooperating Agency will be the Council for Scientific and Industrial Research.

2. a. The nature and location of facilities required in the Union of South Africa for the program are as follows:

(1) Minitrack radio tracking station presently located at Es-selen Park (originally established under an arrangement of October 11, 1957, between the United States Naval Research Laboratory and the Government of the Union of South Africa).

(2) Baker-Nunn camera optical tracking station presently located at Olifantsfontein (originally established in February 1958 under an arrangement between the United States National Committee for the International Geophysical Year and the South African National Committee).

(3) Deep space probe radio tracking station (85 foot diameter antenna) in the vicinity of Johannesburg.

The foregoing list of facilities and locations may be amended from time to time by agreement of our two Governments.

b. The Government of the Union of South Africa will provide sites for each facility at the agreed locations at no cost to the Government of the United States; these sites to remain the property of the Government of the Union of South Africa.

3. The Government of the Union of South Africa will, in so far as practicable, prohibit the operation of radio interference-producing devices (such as power lines, industrial facilities, electric trains, primary highways, etc.) within the vicinity of sensitive radio receiving equipment.

4. In connection with each facility to be operated under the program, the Cooperating Agencies will agree upon arrangements with respect to the duration of use of the facility, the responsibility for and financing of the construction, installation, and equipping of the facility, and other details relating to the establishment and operation of the facility.

5. Each facility established may, unless otherwise agreed, be used for independent scientific activities of the Government of the Union of South Africa, it being understood that such activities would be conducted so as not to conflict with the agreed schedules of operations and that any additional operating costs resulting from such independent activities would be borne by the Government of the Union of South Africa.

6. The Government of the Union of South Africa will, upon request, take the necessary steps to facilitate the admission into the territory of the Union of South Africa of materials, equipment, supplies, goods or other items of property provided by the Government of the United States in connection with activities under this Agreement.

7. a. Title to all the aforementioned property provided by the Government of the United States for use in connection with each facility will remain in the Government of the United States.

b. If, upon terminating its use of a facility, the Government of the United States should desire to dispose of all or part of the property to which it holds title within the territory of the Union of South Africa, the two Governments will consult beforehand on arrangements therefor.

8. Such personal and household effects as shall have been brought into the Union of South Africa free of all taxes and duties by United States personnel, including contractor personnel, assigned to the Union of South Africa under the program, shall not be sold or otherwise disposed of within the territory of the Union of South Africa except under conditions approved by the Government of the Union of South Africa.

With reference to paragraphs 6, 7 and 8, the matter of exemption from duties, taxes and other charges will be the subject of subsequent discussion and agreement between the two Governments as to the specific categories of personnel, goods and materials to which such exemptions will apply, and the degree of exemption, if any, which will be applicable.

9. The Government of the Union of South Africa will, subject to its immigration laws and regulations, take the necessary steps to facilitate the admission into the territory of the Union of South Africa of such United States personnel, including contractor personnel, as may be assigned by the National Aeronautics and Space Administration to visit or participate in the cooperative activities provided for under this Agreement.

10. The resident directors of the facilities will be officials of the Government of the United States, and they will relay the operational directions of NASA to the South African Station Managers who will be in control of the Stations.

11. This Agreement relates to cooperation between the signatories for the peaceful uses of outer space and the facilities established shall not be used for purposes of a military nature.

12. The program of cooperation set forth in this Agreement shall, subject to the availability of funds, remain in effect for a period of fifteen years, and may be extended as mutually agreed by the two Governments. This Agreement is subject to review and possible termination in the event of either party failing to comply with the provisions of the Agreement, or in the event that either party is involved in hostilities.

If the foregoing principles and procedures are acceptable to the Government of the Union of South Africa, I have the honor to propose that this note and your note in reply shall constitute an Agreement between our two Governments to enter into force on the date of your reply.

Accept, Sir, the renewed assurances of my highest consideration."

In reply thereto, I have the honour to inform you that the Government of the Union of South Africa are in agreement with the foregoing and that your Note and the present reply shall be regarded as constituting an Agreement between our two Governments, such Agreement to enter into force and effect on today's date.

I have the honour to be,

Your Excellency's obedient Servant,

G. P. JOOSTE

Secretary for External Affairs.

His Excellency Mr. P. K. CROWE,

*Ambassador Extraordinary and Plenipotentiary
of the United States of America,
Pretoria.*

COOPERATING AGENCY AGREEMENT CONCERNING THE ESTABLISHMENT AND OPERATION OF A STATION IN SOUTH AFRICA AS A PART OF THE DEEP SPACE TRACKING AND COMMUNICATIONS SYSTEM OF THE U.S. NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NOVEMBER 9, 1960)

This agreement is entered into between the National Aeronautics and Space Administration (hereinafter referred to as NASA), as cooperating agency for the Government of the United States of America, and the Council for Scientific and Industrial Research (hereinafter referred to as CSIR), as cooperating agency for the Government of South Africa, pursuant to the exchange of notes, dated September 13, 1960, between the two Governments relating to a cooperative program for the establishment and operation, in South Africa, of facilities for space vehicle tracking and communications for scientific purposes. This agreement is made subject to the provisions of the foregoing exchange of notes and set forth the detailed arrangements for a deep space tracking and communications station to be established in the vicinity of Johannesburg.

1. PURPOSE OF THE STATION

The station to be located in South Africa is to be one station of an initial three-station system. The three stations are to be spaced approximately 120° apart in longitude around the earth for communicating with, for tracking, and for control of space vehicles. The system will support a broad program of scientific research. The schedule for the launching of vehicles in this program requires the station in South Africa to be operational before May 1, 1961. Thereafter, it is expected that launchings will occur about once every 3 months or less, in which this system will be required to provide priority support. Such launchings would require operation of the station for prelaunch station checkout, tracking net integrating time, and mission assignment. After a successful launching, approximately 10 hours of continuous operation will be required each day. The total period of operation per launch will depend on the particular experiment. A major portion of the interval between missions will be utilized for maintenance, equipment updating, and system calibration.

2. SITE

A site for the station, in the vicinity of Hartebeesthoek. CSIR shall arrange for the use of the land at no cost to the United States. The site, which may consist of several parcels of land, will have a total area of approximately 5 square miles.

3. ESTABLISHMENT AND OPERATION OF STATION

(a) The station will be equipped with:

1. An automatic tracking 85-foot parabolic reflector-type antenna with simultaneous lobing antenna feed, mounted on a polar mount and with the necessary servo equipment for movement, and also a 10-foot dish antenna with transmitter and ancillary equipment.

2. Narrow band phase coherent double conversion superheterodyne three-channel receiver system. Initially, the station will operate at 960 megacycles (primary) and 225-260 megacycles (limited capability). In 1963, the primary operating frequency will change to the 2290-2300 megacycle band.

3. Automatic digital readout and conversion equipment required for the rapid serializing and transmission of position data to the U.S. computing and control center.

4. Telemetry recording equipment required for the preservation of telemetered data from the space vehicle.

5. A collimation tower and signal source required for the checkout and calibration of the tracking equipment.

6. Necessary communications to the U.S. computing and control center.

7. Necessary supporting test equipment and spare parts for station maintenance.

8. A high-power transmitting capability, increased receiver sensitivity, additional receiver frequency capabilities and limited computation facilities may be incorporated into the station in the future, subject to the provisions of paragraph 3d(2) of this agreement.

(b) In connection with the establishment and operation of the station, NASA will be responsible for:

1. Furnishing the equipment listed in subparagraph (a) above, with the required spare subassemblies, and all technical equipment required at the station for station support.

2. Furnishing the required basic checkout, maintenance procedures, and technical documentation.

3. Providing the necessary requirements and specifications for engineering, site preparation, and construction of the station facilities, in coordination with CSIR.

4. Installing and checking out with CSIR the equipment listed in subparagraph (a).

5. Training CSIR personnel in the operation and maintenance of the technical equipment to the mutual satisfaction of CSIR and NASA.

6. Furnishing all spare parts for the technical equipment on a continuing basis.

7. Furnishing necessary system coordination and liaison to the CSIR space probe station manager in the form of a permanent onsite representative with necessary staff. During the period of installation and initial operations, any U.S. contractor personnel utilized will be directed by the NASA onsite representative.

8. Furnishing the necessary equipment and operating personnel for specialized data acquisition and onsite interpretation.

9. Furnishing and installing, in association with CSIR, such modifications of and additions to the basic equipment listed in subparagraph (a) above as may be agreed upon. The degree of NASA participation will be determined by mutual agreement depending upon the complexity of the modifications.

10. Furnishing mission scheduling requirements, maintenance standards, and technical station operation criteria, through the NASA onsite representative.

11. Arranging for shipment of all furnished equipment to the agreed upon ports of entry in South Africa.

(c) In connection with the establishment and operation of the station, CSIR will be responsible for:

1. Providing station management.

2. Providing operations and maintenance personnel and manning the station on a continuing basis.

3. Providing necessary personnel in support of the station, such as transportation services, protection, and safety.

4. Arranging for onsite housing, as necessary, and similar support for station personnel.

5. Operating and maintaining all land-line communications into commercial circuits.

6. Arranging for shipment of all equipment from port of entry to the station site.

7. The engineering, site preparation, and construction of the station facilities, in accordance with final plans and specifications having the approval of NASA.

(d) General provisions:

1. CSIR agrees to operate and maintain the station in accordance with the mission scheduling requirements, maintenance standards, and technical criteria for station operation provided by NASA. The CSIR space probe station manager will have direct supervision of all CSIR personnel, and will be responsible for insuring that the foregoing schedule and the operation and maintenance criteria, are maintained to the satisfaction of the NASA onsite representative.

2. NASA may from time to time, in coordination with CSIR, provide additional equipment to be installed at the station sites.

3. All equipment furnished or paid for by NASA for the space probe station will remain the property of NASA. Equipment remaining the property of NASA may be removed or disposed of by NASA upon termination of this agreement, or as otherwise agreed upon with CSIR.

4. Direction and operational coordination in all technical matters pertaining to the network will be provided by NASA through its contractor, the Jet Propulsion Laboratory (JPL) of Pasadena, Calif.

NASA agrees that all equipment at the station will be available for the use of CSIR, provided such use does not interfere with operations relating to the primary mission of the station. CSIR agrees that it will not make any modifications to the equipment without NASA approval, and that all research pro-

grams of substantial duration involving the use of the equipment will be checked with NASA to avoid possible conflict in future plans for use of the equipment. The use of such equipment by CSIR will be without charge, but CSIR will pay all operating costs incident to such use, except as otherwise agreed upon with NASA.

4. FUNDING

a. With the exception of the items of cost referred to in subparagraph (c) below, NASA agrees to bear all costs in connection with the establishment, operation, maintenance, and support of the station, including (but not so as to affect the generality of the foregoing) the following:

1. The cost of equipment and spare parts furnished by NASA, or by CSIR at the request of NASA.

2. Costs incident to the engineering, site preparation, and construction of the site facilities, including special nontechnical facilities as may be necessary; such as roads, communications, power, water, hardstandings, and housing.

3. The cost of transporting to the site all equipment and spare parts furnished by NASA, or by CSIR at the request of NASA.

4. In connection with the installation and checkout of equipment, including subsequent equipment additions and modifications, the cost of NASA and NASA contractor personnel, and all capital expenses.

5. Expenses relating to training South African operating and maintenance personnel, including the cost of visits to the United States as agreed upon between NASA and CSIR.

6. The cost of any U.S. personnel sent to South Africa.

7. The cost of any additional communications facilities required to communicate with the United States and costs incident to the use of communications facilities.

8. The cost of operating and maintaining the station.

b. The foregoing is subject to the understanding that under any contract or supplementary agreement entered into between NASA and CSIR for the establishment, operation, maintenance, or support of the station, NASA will be authorized to reimburse CSIR only for such costs as are reasonable, are actually incurred by CSIR in the performance of and in conformity with the provisions of the contract or supplementary agreement, are allocable to the contract or agreement under accounting principles and practices generally followed by CSIR under contracts with the South African Government, and do not constitute unallowable costs under U.S. practices, such as costs for contributions and donations, entertainment expenses, interest on borrowings and other financing charges, or losses on other contracts.

c. CSIR agrees to bear the following costs in connection with the station:

1. Costs incident to furnishing the land required for the station.

(2) Operating costs incident to the use of equipment pursuant to paragraph 3d (5) of this agreement, unless otherwise agreed upon with NASA.

5. DATA HANDLING AND INFORMATION RELEASE

a. All technical data associated with the U.S. space program are regarded as NASA property and original records will be transmitted to NASA. To the extent to be agreed upon, copies of such data will be made available by NASA to CSIR for the furtherance of its scientific knowledge in space exploration.

b. Public news releases relating to operation of the station in South Africa may be made by joint agreement of NASA and CSIR.

6. TERM OF AGREEMENT

This agreement shall be effective immediately, and remain in effect until June 30, 1969, and thereafter until terminated by either party upon 6 months' written notice. This is subject, however, to the understanding that should changed conditions alter the requirements of NASA for the station at any time prior to June 30, 1969, performance of work under any contract or supplementary agreement entered into between NASA and CSIR for the establishment, operation, maintenance or support of the station may, after consultation between NASA and CSIR, be terminated, upon appropriate advance notice being given by NASA to CSIR.

7. SUPPLEMENTARY ARRANGEMENTS

Supplementary arrangements between NASA and CSIR may be made from time to time as required for carrying out the purposes or provisions of this agreement.

8. AVAILABILITY OF FUNDS

It is understood and agreed that to the extent the execution of this agreement will depend on the appropriation or allocation of funds for the use of NASA and CSIR, respectively, it is subject to the availability of such funds.

Signed at Pretoria on the 9th day of November, 1960.

S. M. NAUDE,

President.

(For the Council for Scientific and Industrial Research).

ERNEST W. BRACKETT,

Director, Procurement and Supply.

(For the National Aeronautics and Space Administration).

COOPERATING AGENCY AGREEMENT CONCERNING THE RELOCATION, MODIFICATION AND CONTINUED OPERATION OF A MINITRACK RADIO STATION IN SOUTH AFRICA (NOVEMBER 9, 1960)

This agreement is entered into between the National Aeronautics and Space Administration (hereinafter referred to as NASA), as cooperating agency for the Government of the United States of America, and the Council for Scientific and Industrial Research (hereinafter referred to as CSIR), as cooperating agency for the government of the Union of South Africa, pursuant to the exchange of notes, dated September 13, 1960, between the two governments relating to a cooperative program for the establishment and operation, or the continued operation, in South Africa, of facilities for space vehicle tracking and communications for scientific purposes. This agreement is made subject to the provisions of the foregoing exchange of notes, and sets forth the detailed arrangements for the continued operation of a Minitrack radio station, now located near Esselen Park but which is to be relocated at a new site near Hartebeesthoek, and for its modification and expansion to make it compatible with present satellite and space vehicle operations.

1. PURPOSE OF THE STATION

This station is presently located on the grounds of the Esselen Park Railway College, about 18 miles northeast of Johannesburg, and about 13 miles southwest of Pretoria. It has been operated since its establishment early in 1958 by personnel of the National Institute for Telecommunications Research (NITR), associated with the Witwatersrand University, as a joint activity between the United States and South African National Committees for the International Geophysical Year. It has provided tracking from all satellites and space vehicles launched by the United States using the radio frequencies approved for IGY or scientific use, and from U.S.S.R. satellites using their special VHF frequencies, since its establishment, and additionally, it has provided full telemetry support for these vehicles since late November 1959. Initial station construction and installation was provided by the NITR staff under the minimal coordination of three engineers from NASA for a period of three weeks each. All operations since that time have been provided completely under the full technical supervision and operation of the NITR in accordance with technical and scheduling directives from the NASA Space Control Center in Washington. This technical staff has demonstrated the highest technical competence in all phases of station operation, calibration, data readout, and communications. It is intended that these services will continue to be provided by the NITR staff, and be under its continuing technical management, in such a way as to meet the established NASA technical and operational directives for the Minitrack network as distributed from the NASA Space Control Center. The Station shall continue to perform the following functions:

(a) Tracking of radio signals from satellites and space vehicles, and the conversion of the data so obtained to a form capable of wire and radio com-

munication to the Minitrack Space Control Center at the Goddard Space Flight Center. The radio signals will be in the vicinity of 136-137 mc initially, but provision shall be made to use other frequencies as established and cleared for this purpose. Interferometer (Minitrack) radio tracking and Doppler tracking shall be provided initially.

(b) Reception and recording of telemetry signals from satellites and space vehicles, and the provision of these records to the Goddard Space Flight Center.

(c) Command of satellite and space vehicle telemetry and scientific experiment operations by ground radio transmitting sets.

(d) Provision of communications terminal operations, to provide for teletype communication to the Space Control Center, GSFC.

(e) Provision of the installation and operation of ground based scientific measurement equipment, as for instance a recording magnetometer, to provide ground calibration for satellite borne experiments.

2. SITE

The site shall be such as meets the requirements for the Revised Minitrack Ground Station Site Criteria as supplied by NASA to provide for present and anticipated satellite tracking and data-acquisition needs, and as meets the logistics, communication and operation requirements imposed by CSIR. It has been determined that the present site on the grounds of the Esselen Park Railway College would be marginal to NASA for future expansion capability in the area of large data-acquisition antennas in the UHF and microwave spectrum of frequencies, and that this site would be less convenient to CSIR and NASA from the logistics, communications and administrative standpoint than a site more adjacent to the proposed deep space tracking and communications station. Expansion requirements for the present Minitrack station in the immediate future require the relocation of all electronics equipment from the present electronics van to a building at its equivalent location with respect to the center of the antenna field, and the addition of a complete new double antenna field at 136-137 mc. These plans require sufficient construction that a complete relocation of the station at a site in the vicinity of the deep space station can economically be considered at this time. It has therefore been agreed that a new site for the Minitrack ground station will be provided within a few miles of the deep space station and that all new Minitrack modifications will be made at this site. NASA will provide all funding required for the transfer of the present Minitrack station, with the exception of the eight 108 mc Minitrack antenna arrays, from the present site at Esselen Park to the new site near Hartebeesthoek, in addition to the funding required to provide the new station modifications. CSIR will provide the use of the land at the new site, at no cost to the United States. Between 10 and 25 acres will be required at the new site for the immediate future, with an expansion capability to between 20 and 50 acres within the next few years to provide an area for the installation of large-data-acquisition antennas as required by NASA. The low acreage figure in both cases refers to the situation where no protection against high structures or possible electrical noise on adjacent land is required; the high acreage figure refers to the case where such protection is required.

3. ESTABLISHMENT AND OPERATION

Present station operation is based on agreements reached between the United States and the South African National Committees for the International Geophysical Year, whereby the United States supplied all of the components constituting a prime Minitrack station, and the South African Committee for the IGY was responsible for the establishment, operation, and maintenance of the station.

a. Continued operation of this station will require the following items of equipment:

(1) An interferometer field to consist of eight 136-137 mc antenna arrays to provide both polar and low inclination antenna coverage, and five ambiguity antennas.

(2) An operations building to house all of the tracking and telemetry electronics, the command transmitters and the communications terminal equipment.

(3) A 136-137 mc tracking ground station system.

(4) A telemetry data receiving-recording system.
 (5) A Doppler receiving-recording system.
 (6) Telemetry (data-acquisition) receiving antennas, including both low-gain and high-gain types, to cover all of the approved space operation frequencies from HF through microwave. The high-gain data acquisition antennas will require a location at least 600 feet from the nearest Minitrack antennas, and a separate data-acquisition laboratory building adjacent to the antenna; this is the antenna referred to under paragraph 2 hereof as a future expansion capability of the station.

(7) Ground command transmitters.
 (8) Ground command transmitting antennas.
 (9) Communications terminal equipment.
 (10) Automatic digital data read-out equipment for the transmission of tracking data to the NASA Space Control Center.

b. In connection with the modification and continued operation of the station, NASA will be responsible for :

(1) Furnishing all equipment listed under paragraph 3.a. above, with all spare equipments, test equipments, operating instructions and special technical equipment required.

(2) Furnishing the basic general specifications and requirements for the architectural and engineering studies required for the station.

(3) Furnishing all technical instructions, procedures and documentation required.

(4) Furnishing training to CSIR personnel in the operation and maintenance of any special equipment items as requested by CSIR.

(5) Providing all special recording materials.

(6) Providing full system operations coordination in the form of schedules, operational directives, data format instructions, etc., as part of the integrated Minitrack Network Operation from the NASA Space Control Center.

(7) Providing on-site NASA representatives or technical advisers as requested by CSIR, or on a short-term basis as deemed advisable mutually between CSIR for special installations, check-outs or operations.

(8) Arranging for shipment of all furnished equipment to the agreed upon ports of entry in South Africa.

(9) Providing all operating spare parts, and replacement parts of a special nature on a continuing basis.

(10) Providing the required teletype communication links between the station and the NASA Space Control Center.

(11) Providing all equipment for the provision of calibration of the station, and personnel as required to train CSIR personnel in calibration procedures.

c. In connection with the establishment and operation of the station, CSIR will be responsible for :

(1) Providing station management.

(2) The engineering, site preparation, and construction, including the provision and execution of the detailed requirements for the items.

(3) Providing operations, maintenance, and communications personnel and maintenance equipment as required for the continued operation of the station on a full-time basis.

(4) Providing support and service personnel as required for transportation, logistic support, et cetera.

(5) Arranging for shipment of all equipment from the port of entry to the station site.

(6) Providing calibration aircraft and performance of calibration on at least a twice-yearly basis.

d. General provisions :

(1) CSIR agrees to operate and maintain the station in accordance with the mission scheduling requirements, maintenance standards, and technical station operation criteria provided by NASA.

(2) NASA may from time to time, in coordination with CSIR, provide additional equipment to be installed at the station site. In the event the installation of additional equipment would increase the cost of CSIR under this agreement, NASA will advise CSIR sufficiently in advance that arrangements may be made between NASA and CSIR concerning funding.

(3) All equipment furnished or paid for by NASA will remain the property of NASA. Such equipment, and equipment initially provided by the Naval

Research Laboratory, which is now under NASA title, may be removed or disposed of by NASA upon termination of this agreement, or as otherwise agreed upon with CSIR.

(4) Any equipment furnished or paid for by CSIR will remain the property of CSIR.

(5) Direction and operational coordination in all technical matters pertaining to this station will be provided by the NASA Space Control Center. With respect to the deep space station, operation of the two stations shall be on a cooperative basis so as to enable CSIR to conserve personnel and logistic support expenditures, but the technical control and operation of the minitrack station shall be maintained separately from the deep space station.

(6) All technical data, both tracking and telemetry, will be handled as follows:

(a) All raw data from tracking operations will be transmitted to the NASA Space Control Center by teletype as soon as they are obtained.

(b) All raw data from tracking operations will be available to CSIR for use in analysis and supporting research; CSIR will provide NASA with copies of all reports and papers resulting from the use of such data. In the event NASA requires the submission of the raw tracking records to its space control center, or other designated agency, CSIR will be allowed to duplicate such records as it requires prior to their submission.

(c) All tracking and telemetry equipment will be available for the use of CSIR, provided such use does not interfere with the normal network tracking and telemetry operations. CSIR agrees that it will not make any modifications to the equipment without NASA approval and that all research programs of substantial duration involving the use of the equipment will be checked with NASA to avoid possible conflict in future plans for use of the equipment. The use of such equipment by CSIR will be without charge, but CSIR will pay all operating costs incident to such use, except as otherwise agreed upon with NASA.

(d) All reduced tracking data, in the form of orbital data and pertinent ephemerides and predictions, resulting from raw data supplied by this station as well as by all of the other network stations, will be supplied to CSIR in the most expeditious manner.

(e) The provision of raw telemetry data must follow normal scientific data handling practice, where the raw data are first and immediately supplied to the experimental agency responsible for the particular satellite or space vehicle experiment from which the data were obtained, without playback or deterioration of the original data tape at the recording station.

(f) Every effort will be made to guarantee that the experimental agency will make available all final reports based on the telemetry data taken at the station to CSIR.

It is desired that this station become operational on the new 136-137 megacycles on or about February 1, 1961.

4. FUNDING

a. With the exception of the items of cost referred to in subparagraph c below, NASA agrees to bear all costs in connection with the modification, removal, operation, maintenance, and support of the station, including (but not so as to affect the generality of the foregoing) the following:

(1) The cost of equipment and spare parts furnished by NASA, or by CSIR at the request of NASA, and of their transportation to the site;

(2) Costs incident to the engineering, site preparation, and construction required for station modification, including any special nontechnical facilities required, such as roads, communications, power, water and hardstandings, and of removal of equipment to the new site;

(3) The cost of installing all equipment at the site;

(4) The cost of managerial supervision by CSIR and of CSIR support personnel, in support of the modification and operation of the station;

(5) The cost of salaries and subsistence of the staff of CSIR as are permanently and solely employed at the station.

(6) Subsistence, travel costs, and the reasonably assessed proportion of the salaries of any of the staff of CSIR temporarily employed at the station in connection with the modification and operation of the station.

(7) The cost of training South African operating and maintenance personnel, including the cost of visits to the United States as agreed upon between NASA and CSIR;

(8) The cost of any U.S. personnel sent to South Africa, including accommodation costs in CSIR establishments;

(9) The cost of providing communications facilities and services for data transmission to, and communication with, the space control center;

(10) The cost of providing communications facilities required for local support of the station.

b. The foregoing is subject to the understanding that under any contract or supplementary agreement entered into between NASA and CSIR for the relocation, modification, operation, maintenance, or support of the station, NASA will be authorized to reimburse CSIR only for such costs as are reasonable, are actually incurred by CSIR in the performance of and in conformity with the provisions of the contract or supplementary agreement, are allocable to the contract or agreement under accounting principles and practices generally followed by CSIR under contracts with the South African Government, and do not constitute unallowable costs under U.S. practices, such as costs for contributions and donations, entertainment expenses, interest on borrowings and other financing charges, or losses on other contracts.

c. CSIR agrees to bear the following costs in connection with the station:

(1) Costs incident to furnishing the land required for the station.

(2) Operating costs incident to the use of equipment pursuant to paragraph 3d.(6)(c) of this agreement, unless otherwise agreed upon by NASA.

d. CSIR will provide to NASA an estimated budget for the ensuing _____ year by _____ of each year. [calendar or fiscal]

5. INFORMATION RELEASE

Public news releases relating to station operation in South Africa connected with the U.S. space program may be made by joint agreement of NASA and CSIR.

6. TERM OF AGREEMENT

This agreement shall be effective immediately, and shall remain in effect until June 30, 1969, and thereafter until terminated by either party upon 6 months' written notice. This is subject, however, to the understanding that should changed conditions alter the requirements of NASA for the station at any time prior to June 30, 1969, the performance of work under any contract or supplementary agreement entered into between NASA and CSIR for the relocation, modification, operation, maintenance or support of the station may, after consultation between NASA and CSIR, be terminated, upon appropriate advance notice being given by NASA to CSIR.

7. SUPPLEMENTARY ARRANGEMENTS

Supplementary arrangements between NASA and CSIR may be made from time to time as required for carrying out the purposes or provisions of this agreement.

8. AVAILABILITY OF FUNDS

It is understood and agreed that to the extent the performance of this agreement will depend on the appropriation or allocation of funds for the use of NASA and CSIR respectively, it is subject to the availability of such funds.

Signed at Pretoria, on the 9th day of November, 1960.

S. M. NAUDE,

President.

(For the Council for Scientific and Industrial Research).

ERNEST W. BRACKETT,

Director, Procurement and Supply.

(For the National Aeronautics and Space Administration).

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION NEGOTIATED CONTRACT

(Contract No. NASw-208, November 22, 1960)

Issuing office.—National Aeronautics and Space Administration, 1520 H Street NW, Washington 25, D.C.

Contractor.—Council for Scientific and Industrial Research, Post Office Box 395, Pretoria, Union of South Africa. Contract for services in connection with a radio tracking facility (minitrack). Amount: \$230,000.

APPROPRIATION AND OTHER ADMINISTRATIVE DATA

Control number.—53-169-1, GS-1519 and 53-182-1.

Type of contract.—Cost-Reimbursement.

Administration by.—National Aeronautics and Space Administration, 1520 H Street NW, Washington 25, D.C. Attention: Code BR.

Appropriation and allotment chargeable.—80x0107(61) C. & E. Project 3224 and R. & D. 80x0108(61) Tracking and Data.

Office to make payment.—Fiscal Officer, Goddard Space Flight Center, Bldg. T-28, Anacostia Naval Station, Washington 25, D.C. Attention: Mr. Probst.

This negotiated contract is entered into pursuant to the provisions of 10 U.S.C. 2304(a)(6) and any required Findings and Determination have been made

This contract is entered into as of November 22, 1960, by and between the United States of America, hereinafter called the Government, represented by the contracting officer executing this contract, and the Council for Scientific and Industrial Research, an organization existing under the laws of the Government of the Union of South Africa, hereinafter called CSIR. The parties hereto agree that the CSIR shall perform all the services set forth in the attached Schedule, for the consideration stated therein.

SCHEDULE

ARTICLE I—SCOPE OF WORK

(a) CSIR will, in connection with the relocation and modification of a Radio Tracking Facility (Minitrack) in the Union of South Africa, perform necessary services required for site selection, precision surveys, architectural-engineering, construction, erection and installation of equipment, all in accordance with the detailed requirements set forth in attachment "A" to this contract.

(b) CSIR will also be responsible for tests, calibrations, operation and maintenance, as set forth in attachment "B" to this contract.

ARTICLE II—TIME OF PERFORMANCE

(a) To the maximum extent possible, CSIR shall schedule and perform the work called for under article I(a) hereof, so as to comply with the completion dates set forth under paragraph 2.5 of attachment "A" to this contract.

(b) CSIR shall perform the work called for under article I(b) hereof, so as to comply with the provisions of attachment "B" to this contract and shall in any event complete it within 12 months from the date CSIR is notified by the contracting officer that this contract has been executed by the U.S. Government.

ARTICLE III—ESTIMATED COST

(a) The estimated cost of the work under article I(a) of this contract is \$125,000, which amount will not include any fee or profit for CSIR.

(b) The estimated cost of the work under article I(b) of this contract is \$105,000, which amount will not include any fee or profit for CSIR.

ARTICLE IV—PROGRESS REPORTS AND ESTIMATES OF COSTS

(a) Once each month, or at such other frequency as may be mutually agreed upon, CSIR shall submit a report on the progress of the work called for under article I(a) of this contract, until such work is completed, and thereafter a

report on the operation and maintenance of the station, as provided for under article I(b) of this contract. Such report will include, in sufficient detail to permit analysis for purposes of proper fund programing, a statement of the estimated costs incurred during the month reported, and a forecast of the costs to be incurred during the next succeeding three months.

(b) By March 31 of each year, CSIR shall submit an estimate of the cost of operation and maintaining the station for the following South African fiscal year (April 1 to March 31). Such estimates will be prepared in the form and detail mutually agreed upon.

ARTICLE V—ALLOWABLE COST AND PAYMENT

(a) The U.S. Government shall pay to CSIR costs incurred under this contract and determined to be allowable as provided hereinafter. Costs shall be determined to be allowable (i) if reasonable, (ii) if actually incurred by CSIR in performance of and in conformity with the provisions of this contract, and (iii) if allocable to this contract in accordance with accounting principles and practices generally followed with respect to contracts made by CSIR with the South African Government. Subject to the above, the U.S. Government shall reimburse CSIR for the following costs:

- (1) Engineering labor.
- (2) Applicable indirect costs.
- (3) Travel and transportation, including subsistence allowance.
- (4) Rental of equipment.
- (5) Laboratory analysis costs.
- (6) Costs of subcontracts.
- (7) Costs of materials and supplies.
- (8) Costs of preparation and reproduction of reports, drawings, etc.
- (9) Costs of performing photographic services, data processing and analysis.
- (10) Communications (telephone, postage and telegram).
- (11) Cartography.
- (12) Any other proper costs incurred or expenditures made by CSIR pursuant to any of the provisions of this contract or directed or approved by the contracting officer, except such costs as arise from contributions and donations, entertainment expenses, interests on borrowings and other financing charges, or losses on other contracts.

(b) Once each month, or at more frequent intervals if approved by the contracting officer, CSIR may submit to the contracting officer, in such form and reasonable detail as he may require, a voucher supported by a statement of costs incurred by CSIR in performing this contract and claimed to constitute allowable costs. Each statement of costs shall be certified by a responsible official of CSIR authorized to certify such statements.

(c) As promptly as may be practicable after receipt of each voucher by the contracting officer, the U.S. Government shall make payment thereon in accordance with the provisions of this article, subject to the limitation that the U.S. Government shall not be obligated to reimburse CSIR for expenditures in excess of the estimated cost of this contract. Payment will be made in U.S. dollars, at the rate of exchange current on the date of payment.

(d) Prior to final payment under this contract and as a condition for such final payment, the appropriate agency of the South African Government will conduct an audit of the expenditures made by CSIR and charged to this contract. It shall submit a report of such audit to the contracting officer which report shall indicate the amounts which are properly chargeable to this contract under normal accounting principles and practices of CSIR.

ARTICLE IV—CHANGES AND INCREASE IN COST

The contracting officer may at any time, by written notice, make changes within the general scope of this contract in the work to be performed hereunder. Upon receipt of such notice, CSIR shall continue performance of the contract as changed. In the event an increase in the estimated cost of the contract is anticipated either by virtue of a change or otherwise, CSIR shall notify the contracting officer so as to permit the negotiation of a supplemental agreement hereto by the parties in a timely fashion.

ARTICLE VII—DATA AND INSPECTION

The U.S. Government, and CSIR with the consent of the U.S. Government, may publish, reproduce, and use, and have others so do, for any purpose, without limitation, drawings, studies, test results, technical information, and other data resulting from this contract. The U.S. Government will have the right, at all reasonable times, to inspect or otherwise evaluate the work being performed under this contract.

ARTICLE VIII—RELATIONSHIP OF COOPERATING AGENCY AGREEMENT

It is mutually agreed that this contract is made in implementation of the cooperating agency agreement concerning the relocation, modification, and continued operation of the Minitrack Radio Station which was entered into between CSIR and NASA on November 9, 1960, and that nothing in this contract shall be construed to be intended to supersede or vary the provisions of the cooperating agency agreement.

ARTICLE IX—APPROVAL PROVISION

This contract is subject to the written approval of the Director of Procurement and Supply Division, NASA Headquarters, and shall not be binding until so approved.

GENERAL PROVISIONS

1. DEFINITIONS

As used throughout this contract, the following terms shall have the meanings set forth below:

(a) The term "U.S. Government" means the Government of the United States of America.

(b) The term "South African Government" means the Government of the Union of South Africa.

(c) The term "NASA" means the National Aeronautics and Space Administration of the U.S. Government.

(d) The term "CSIR" means the Council for Scientific and Industrial Research, Pretoria, Union of South Africa.

(e) The term "contracting officer" means the person executing this contract on behalf of the U.S. Government and any other official or civilian employee who is a properly designated contracting officer; and the term includes, except as otherwise provided in this contract, the authorized representative of a contracting officer acting within the limits of his authority.

(f) Except as otherwise provided in this contract, the term "subcontract" includes purchase orders under this contract.

2. NOTICE OF SUBCONTRACTS

(a) CSIR agrees to notify the contracting officer in advance of any proposed cost or cost-plus-a-fixed-fee subcontract hereunder, or any fixed price subcontract or purchase order involving more than \$25,000 or more than five percent of the estimated cost of this contract.

(b) CSIR agrees that it will not enter into any subcontracts providing for payment on a cost-plus-a-percentage-of-cost basis.

3. ASSIGNMENT OF CONTRACT OR CLAIMS

The CSIR shall not assign this contract or any interest herein or any claim hereunder.

4. RECORDS

CSIR agrees to maintain books, records, documents, and other evidence pertaining to the costs and expenses of this contract to the extent necessary to properly reflect all net costs for which reimbursement is claimed under the provisions of this contract.

5. TERMINATION

(a) This contract may be terminated by the U.S. Government in whole or in part whenever the contracting officer shall determine that such termination is

in the best interests of the U.S. Government. Any such termination shall be affected by delivery to CSIR at its offices of a notice of termination in writing specifying the extent to which the contract is terminated and the date or dates upon which such termination is effective. After receipt of a notice of termination, CSIR shall cease work on the effective date of termination and use its best efforts to minimize any amount due CSIR from the U.S. Government caused by such termination.

(b) CSIR and the contracting officer shall agree on the amounts to be paid as a result of a termination under this clause, and such agreement shall be evidenced by a supplemental agreement to this contract. In determining such amounts, the provisions of article IV of the schedule of this contract shall govern.

6. LABOR RELATIONS AND STANDARDS

The provisions of this contract and the performance hereunder shall be subject to and in accordance with the laws of the South African Government and any political subdivisions thereof, from time to time in effect, which govern the hours, wages, labor relations (including collective bargaining), workmen's compensation, working conditions, and other matters pertaining to labor.

7. COVENANT AGAINST CONTINGENT FEES

CSIR warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee except officers of CSIR employed for the purpose of securing business. For breach or violation of this warranty, the U.S. Government shall have the right to annul this contract without liability, or in its discretion to deduct from the contract price or consideration or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

8. U.S. OFFICIALS NOT TO BENEFIT

No Members of or Delegate to the Congress of the United States of America, or Resident Commissioner of the United States of America, shall be admitted to any share or part of this contract, or to any benefit that might arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

9. REPORTING OF ROYALTIES

CSIR agrees to report to the contracting officer the amount of any royalties paid or to be paid by CSIR directly to others in connection with the performance of this contract, and to furnish additional information concerning such payments as may be requested by the contracting officer. CSIR will also require similar reports from subcontractors hereunder if the subcontract involves an amount in excess of the equivalent of U.S. \$50,000.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION SUPPLEMENTAL AGREEMENT

(Contract No. NASw-208, amendment No. 5, March 1, 1963)

Contractor.—Council for Scientific & Industrial Research, Post Office Box 395, Pretoria, Union of South Africa.

Change in price: Increase, \$242,000.

Accounting and appropriation data: Headquarters R. & D. 80x0108(63) 51-500-312-01-01 (PR No. 10-722); 51-500-311-01-14 (PR No. 10-725); 51-500-312-01-01 (PR No. 10-725).

This supplemental agreement is entered into pursuant to: 10 U.S.C. 2304(a) (6). Said contract is amended and supplemented as follows:¹

* * * * *

¹ The portion omitted is not immediately pertinent to the subject matter of the hearings.

3. Under article III of the schedule, the following paragraphs are added:
 "(c). The estimated cost of the work under article I(c) of this contract is \$202,000, which amount will not include any fee or profit for CSIR.

"(d). The estimated cost of the work under article I(d) of this contract is \$40,000, which amount will not include any fee or profit for CSIR.

4. Under article IV of the schedule, the following paragraph is added:

"(c). Once each month, CSIR shall submit a report on the progress of the work called for under article I(c) and (d), of this contract. Such reports shall be submitted during the time of performance set forth in article II(c) and (d) of this contract, and will include, in sufficient detail to permit analysis for purposes of proper fund programming, a statement of the estimated costs incurred during the month reported and a forecast of the costs to be incurred during the next succeeding three months."

5. The following article XI is hereby added to the Schedule:

"Article XI. Training to be Provided by NASA

"NASA will provide training for CSIR personnel in operation and maintenance of technical equipment. The nature and extent of the training to be provided will be as specified heretofore or henceforth in correspondence between NASA and CSIR."

6. Article VII, relationship of cooperating agency agreement, of the schedule, is hereby renumbered article VIII to correct a duplication in the numbering.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION SUPPLEMENTAL AGREEMENT
(FEBRUARY 17, 1965)

Contractor.—Council for Scientific and Industrial Research, Post Office Box 395, Pretoria, Union of South Africa. Issued by National Aeronautics and Space Administration, code BCB, Washington, D.C. 20546. Contract No. NASW-156.

The above numbered contract is modified as follows:

Whereas, the Government recognizes that the manning requirements for qualified technical personnel to operate the station has increased greatly over the original estimate; and,

Whereas, this increase in personnel manning levels has imposed a heavy burden on the contractor in recruiting qualified personnel; and,

Whereas, the contractor, in order to assure obtaining qualified personnel in sufficient numbers to maintain performance standards of the Station must assume a strong competitive position with industry; and,

Whereas, the means by which such competitive position may be attained by the contractor is through the offering of academic training to personnel with promising technical capability; and,

Whereas, the Government, by assuming a portion of the cost of such academic training will benefit directly through being assured of having an adequate complement of qualified technical personnel for the operation of the station;

Now, therefore, this contract is amended and supplemented as follows:

A. Under article I., *Scope of Work*, add the following new paragraph:

"h. In order to meet the manning requirements of the station, the contractor shall extend its policy of offering financial assistance in academic training to promising personnel at South African universities, to provide a source of engineering graduates specifically for the needs of the station. This academic training program shall be conducted in conformance with the contractor's established policies for the training of personnel for its own domestic needs."

B. Under article IV., allowable cost and payment, subparagraph (a) add the following new paragraphs:

"(13) All costs incurred by the contractor in recruiting personnel shall be allowable under this contract and shall be chargeable to the funds allocated for station operation as set forth in article III., C of the schedule.

"(14) The cost of conducting the academic training program added to this contract by article I., h. above shall be shared equally by the Government and the contractor and the Government's share of such costs incurred shall be chargeable to the funds allocated for station operation as set forth in article III., C. of the schedule."

C. Under article VII., progress reports and estimates of cost, add the following new paragraph:

"d. Once each month the contractor shall submit a report on the progress of the work called for under article I. h. of this contract. Such report will include, in sufficient detail to permit analysis for purposes of proper fund programming, a statement of the estimated costs incurred during the month reported, and a forecast of the costs to be incurred during the succeeding 3 months."

By CARL M. GREY,
Contracting Officer.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION—SUPPLEMENTAL AGREEMENT
(FEBRUARY 17, 1965)

Contractor.—Council for Scientific and Industrial Research, Post Office Box 395, Pretoria, Union of South Africa. Issued by National Aeronautics and Space Administration, Code BCB, Washington, D.C. 20546. Contract No. NASW-208.

The above numbered contract is modified as follows:

Whereas the Government recognizes that the manning requirements for qualified technical personnel to operate the station has increased greatly over the original estimate; and

Whereas this increase in personnel manning level has imposed a heavy burden on the contractor in recruiting qualified personnel; and,

Whereas the contractor, in order to assure obtaining qualified personnel in sufficient numbers to maintain standards of the station must assume a strong competitive position with industry; and

Whereas the means by which such competitive position may be attained by the contractor is through the offering of academic training to personnel with promising technical capability; and,

Whereas the Government, by assuming a portion of the cost of such academic training will benefit directly through being assured of having an adequate complement of qualified technical personnel for the operation of the station;

Now, Therefore, this contract is amended and supplemented as follows:

A. Under article I, scope of work, add the following new paragraph:

"(g) In order to meet the manning requirements of the station, the contractor shall extend its policy of offering financial assistance in academic training to promising personnel at South African universities, to provide a source of engineering graduates specifically for the needs of the station.

This academic training program shall be conducted in conformance with the contractor's established policies for the training of personnel for its own domestic needs."

B. Under article V, allowable cost and payment, subparagraph (a) add the following new paragraphs:

"13. All costs incurred by the contractor in recruiting personnel shall be allowable under this contract and shall be chargeable to the funds allocated for station operation as set forth in article III. C of the schedule."

14. The cost of conducting the academic training program added to this contract by article I, g above shall be shared equally by the Government and the contractor and the Government's share of such costs incurred shall be chargeable to the funds allocated for station operation as set forth in article III, C of the schedule.

C. Under article VII, progress reports and estimates of cost, add the following new paragraph:

"e. Once each month the contractor shall submit a report on the progress of the work called for under article I, g of this contract. Such report will include, in sufficient detail to permit analysis for purposes of proper fund programming, a statement of the estimated costs incurred during the month reported, and a forecast of the costs to be incurred during the succeeding 3 months."

By CARL M. GREY,
Contracting Officer.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION SUPPLEMENTAL AGREEMENT
(DECEMBER 4, 1967)

Contractor.—Council for Scientific and Industrial Research, Post Office Box 395, Pretoria, Republic of South Africa. Issued by NASA Headquarters, Attention: Code DHC-22, Washington, D.C. 20546. Contract NASW-208.

Accounting and appropriation data: NASA Headquarters, R. & D., 80x0108-(68), 10-51-500-311-02.

The above numbered contract is modified as follows:

ARTICLE I. SCOPE OF SUPPLEMENTAL AGREEMENT

This supplemental agreement provides for the establishment, operation, and maintenance at the present NASA Stadan facility site, of a temporary optical geodetic satellite observation system (BC-4 camera).

ARTICLE II. RESPONSIBILITIES ¹

* * * * *

B. NASA

NASA shall, through the U.S. Coast and Geodetic Survey, an element of the Environmental Science Services Administration of the Department of Commerce, Government of the United States of America (U.S.C. & G.S.):

1. Furnish all equipment, spare parts, and operating instructions required for the operation of the optical BC-4 camera system at the site. This equipment may include one motor vehicle for utilization during the period of the site operation.
2. Furnish all technical and operational instructions.
3. Furnish training to CSIR personnel in the operation of system equipment.
4. Provide all special recording materials, photographic plates, and incidental expendable supplies, not available from local sources.
5. Provide full systems operations coordination in the form of schedules, operational directives, and data format instructions.
6. Provide one on-site technical representative from the U.S. Coast and Geodetic Survey and representatives or technical advisers as may be requested by CSIR or on a short term basis as deemed advisable mutually by CSIR and NASA for training special installations or checkout of equipment or operations.
7. Arrange for shipment of all furnished equipment to the agreed upon ports of entry in South Africa.
8. Provide all operating spare parts and replacement parts of a special nature on a continuing basis for the entire period of operations.
9. Provide all equipment and personnel for making periodic timing checks of the BC-4 camera timing and synchronization system.
10. Provide all equipment for testing of the system and personnel as required to train CSIR personnel of operational procedures.

* * * * *

By S. M. NAUDÉ,
President.

(Council for Scientific and Industrial Research).

By CARL M. GREY,
Contracting Officer.

(National Aeronautics and Space Administration).

¹ The portion omitted is not immediately pertinent to the subject matter of the hearings.

APPENDIX 3

CSIR ANNUAL REPORT 1970

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National Physical Research Laboratory.
Magnetic Observatory.
Republic Observatory.
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National Food Research Institute.
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SOUTH AFRICAN COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH—26TH ANNUAL
REPORT 1970

INTRODUCTION

The year 1970 has been a memorable one for the CSIR. On October 5, 1970, this organization celebrated its 25th anniversary and stopped for a moment to look back over the period in which it grew from humble beginnings to a comprehensive organization covering practically every sphere of science and technology.

That the CSIR came into being at the beginning of a period of tremendous industrial development in this country was no coincidence. On the occasion of the anniversary celebrations at Scientia, the State President and the Minister of Planning paid tribute to those to whom the organization owes its establishment—the then Prime Minister, the late Gen. J. C. Smuts, and the founder and first President of the CSIR, Dr. B. F. (later Sir Basil) Schonland. As far back as the early forties General Smuts realized that South Africa would have to be able to hold her own in the technological sphere in order to cope with the expected rapid development of the postwar years, and Dr. Schonland created the kind of organization which could help fulfill this need.

The statutory instructions of the new council were to undertake and develop scientific and industrial research and to advise the Government on matters related to the utilization of the country's natural resources and on the proper coordination and application of research for the advancement of industrial development, and to cooperate with educational and other authorities in the teaching of science and the training of research workers and technologists. The council was also instructed to create the necessary facilities for research and

for the collection and dissemination of information in the scientific and technical spheres and to effect liaison with international and other overseas organizations in these spheres.

In his first annual report (November 1946) Dr. Schonland was able to report considerable progress in the setting-up and staffing of certain national laboratories and research services, the organization and carrying out of a program for the encouragement and support of research in universities and similar institutions, the organization of industrial research associations, and the establishment of committees to advise it on future developments which are needed.

How these services have since expanded is clear from the survey of the council's activities given in this annual report.

During its jubilee year the council suffered a great loss with the death of one of its founder members, Dr. H. J. van Eck, who from October 1945 until his death served as a council member. The council wishes to pay tribute here to the memory of a great South African who contributed tremendously to the promotion of industrial development in South Africa. His help and guidance through the years have been invaluable to the CSIR.

Three new council members were appointed during the year to replace the late Dr. van Eck as well as Dr. F. G. Hill and Professor S. F. Oosthuizen who retired at the end of their terms of office. They are Dr. G. S. J. Kuschke, chairman of the Industrial Development Corp.; Mr. J. W. Shilling, a director and manager of the Anglo American Corp. of S.A.; and Professor A. J. Brink, president of the South African Medical Research Council.

In the previous annual report the resignation of the deputy president, Dr. N. Stutterheim, was mentioned. During the year under review Dr. C. van der Merwe Brink was appointed deputy president in his place. Dr. Brink has been a vice president of the CSIR since 1967, and was previously professor of organic chemistry at the University of the Orange Free State.

Another appointment to the executive was that of Dr. P. J. Rigden as a vice president. Dr. Rigden was director of the National Institute for Road Research from its establishment in 1955, and has been succeeded in that capacity by Mr. S. H. Kühn.

The appointment of Professor J. F. Kemp as third vice president (with effect from January 1, 1971) was also announced during the year. Professor Kemp was until recently professor of mechanical engineering at the University of Stellenbosch.

Toward the end of the year under review the establishment of a new research institute was announced. This institute, the National Electrical Engineering Research Institute, was created out of the Electrical Engineering Research Department of the National Research Institute for Mathematical Sciences. Mr. J. D. N. van Wyk was appointed director of the new institute which will cover research in both the light and heavy current fields.

In September 1970 it was made known that the CSIR and the Science Research Council of Great Britain had agreed on a joint astronomical venture. This involves inter alia pooling the resources, in both manpower and equipment, of the Republic Observatory in Johannesburg and the Royal Observatory in Cape Town, for a new institution to be known as the South African Astronomical Observatory, with a new observing station near Sutherland in the Karoo where conditions for observing are very favorable. The world-famous astronomer Sir Richard van der Riet Woolley, has been appointed the first director of the new observatory as from January 1, 1972, when the observatory will officially become operative. This development is of great importance to astronomical research in South Africa, as progress in this sphere has been seriously impeded in recent years by the deterioration of observing conditions at the existing observatories in the big cities.

An important international scientific meeting—the Second International Symposium on Gondwana Stratigraphy—was held in South Africa in July. This symposium, attended by experts from many parts of the world, was organized by the CSIR under the aegis of the International Union of Geographical Sciences. The first sessions were held in Cape Town and were followed by field excursions through the Karoo and parts of the Transvaal and Natal where visitors had the opportunity of seeing the rock types of the Karoo system and the fossils they contain. The symposium ended with sessions in Johannesburg. A milestone in the efforts to preserve South Africa's water supplies was reached in November with

the official opening by the Minister of Water Affairs of the Stander Water Reclamation Plant at Pretoria's Daspoor sewage works. The plant was named after Dr. G. J. Stander, Director of the National Institute for Water Research, and leader of the team of scientists who developed the process for reclaiming potable water from sewage effluent. It can produce 4 500m³ of potable water of the highest quality from sewage effluent daily and is an improved version of the reclamation plant which was previously commissioned in Windhoek. This experimental plant will serve as a model in the planning of large-scale schemes for water reclamation in South Africa.

NATIONAL CHEMICAL RESEARCH LABORATORY

The National Chemical Research Laboratory (NCRL) serves as a center where the latest developments in chemical science are brought to bear on problems of national significance.

The Laboratory is organized into divisions of organic chemistry, biochemistry, macromolecular chemistry, inorganic chemistry and analytical chemistry. The NCRL also supervises a chemical engineering group and operates a chemical physics group jointly with the National Physical Research Laboratory. Without basic research, whereby fundamental or new knowledge is obtained, applied research cannot progress. Whereas most fundamental research workers, such as scientists at universities, can undertake basic research purely to obtain more knowledge about some particularly interesting subject, a national laboratory like the NCRL must limit its choice of fundamental study projects to those which may benefit applied research.

It is the NCRL's policy to concentrate its fundamental research on fields where, for practical reasons, a demand for more knowledge exists. In accordance with this policy, the vast majority of research projects is carried out in collaboration with other research organizations which are directly concerned with the practical problems involved.

BANTU BEER

Though the total amount of Bantu beer brewed by municipalities has continued to increase, the rate of increase has dropped sharply in recent years. In some places poor quality beer may be the cause, but indications are that the pattern of consumption is changing. The Department of Bantu Administration and Development has set up an *ad hoc* committee, on which the Laboratory's Bantu Beer Unit is represented, to study the needs of the industry from a national standpoint. The unit has assisted in practical investigations and has prepared two reports.

In its research work, the unit has made two important advances in brewing practice in the past year. One is an easy method for measuring modification of malts, and the other an improved souring technique.

CORROSION

As in the past, the corrosion group at the Laboratory has been concerned mainly with assisting and advising various hodies. This included work on 19 major projects as well as dealing with enquiries from Malawi and New Zealand.

Fundamental work has been carried out on galvanized steel pipes in hot-water systems, as it has been claimed that electrode potentials of steel and zinc are reversed at temperatures over 70° C. Potentiostatic studies have been made of the corrosion of a number of metals and alloys under the influence of alternating current. A number of studies on dezincification of brasses have been completed. A thorough review of work on microbiological corrosion has been widely requested.

SUBSTANCES WITH PHARMACOLOGICAL ACTIVITY

An agreement has been reached between the Botanical Research Institute of the South African Department of Agricultural Technical Services and the United States Department of Agriculture for provision of samples of dried plant materials to be tested for antitumor activity. Chemical work on substances showing activity will continue in the Laboratory. Work on seven plant species is in progress.

Further steroidal derivatives have been made in the search for substances with hormone properties. The raw materials for these came from members of the cucumber family. The Horticultural Research Institute has cultivated a species with a high yield and has developed hybrids.

Synthesis of modified nucleosides with possible antitumor properties continued, and a new method of attaching branched chains to the sugar moiety has been worked out.

TOXIC METABOLITES FROM FUNGI

The Laboratory's work in this field is well known internationally, and two of its leading workers have completed review articles for a monograph at the request of Academic Press. Structures of new metabolites have been elucidated, and the precursors of ochratoxin have been identified.

INSECT PHEROMONES

This work requires collaboration with entomologists of the Department of Agricultural Technical Services, and as the project on ant trail substances has been terminated by the department, further work has ceased. New projects on a moth which is an agricultural pest and on the gregarization pheromone of locusts (very successful work was done on the latter by the Department of Zoology at the University of the Witwatersrand), have been commenced.

BILHARZIA

Work on the uptake of a group of molluscicides by snails has stopped. It was found that the substances are concentrated by the snail, but that they are taken up by dead snails to the same extent as by live snails, only more slowly. Thus the phenomenon seems to be one of simple adsorption by the tissues. The substance exuded by snails as a miricidal attractant appears to be a carbohydrate.

DIGESTION AND METABOLISM IN RUMINANTS

The group dealing with this project has made good progress on long-term studies of the implications of earlier findings but has not yet reached the stage of definitive findings. It has been shown that certain branched-chain volatile fatty acids are formed from amino acids and are essential to activity of cellulolytic bacteria. Conditions governing the formation of these when urea is used as a supplement are being studied, particularly the effect of simultaneous starch additives. More fundamental studies by continuous culture methods are also underway.

In studies of urea supplements, it was found advisable to use a lick containing some sodium sulphate to insure an adequate supply of sulfur in the rumen.

The value of biuret as a supplement instead of urea has been established. The way biuret is used in the rumen is not clearly understood but a step forward has been the discovery that the microorganisms responsible are mainly on the surface of coarse solid matter in the rumen, not in ruminal fluid.

CANCER BIOCHEMISTRY

It was previously reported that, shortly after they were administered, dyes producing liver cancer could be found in the nuclei of liver cells. During the past year, it was established that the dye is taken up primarily by the protein part of a fraction known as inactive chromatin. Chromatin, a complex formed by proteins closely bound to nuclear DNA, is usually insoluble, and the success of the experiment depended upon developing a technique to obtain it in soluble form. A method was also developed to split off the protein part of the soluble chromatin and to separate it. A further finding is that if the dye is attached to the protein of chromatin its bonding to DNA is weakened.

The importance of techniques for fractionation of cellular components is evident from the above. An officer has spent a year in the United States of America studying this specialized field.

PROTEIN CHEMISTRY

The amino-acid sequences have been established for several more of the numerous toxins isolated from cobra species, including the Cape cobra, ringhals and mamba. The positions of sulfur bridges or cystine linkages have been established. Interesting relationships between the various structures were discovered and the work was reported at an international meeting in Israel. Biochemical studies have begun and immunological work, carried out in collaboration with the South African Institute for Medical Research, is being extended.

Studies of a proteolytic enzyme from puff-adder venom have progressed, but have been made difficult by the fact that the enzyme, which appears to have a minimal molecular weight of 22,000, very readily associates to as much as ten times this molecular weight.

Structural studies are now being made of phosvitin from yolks of hen's eggs. A comparison has been made with turkey eggs and duck eggs, which show significant differences in composition. They are similar, however, in that they contain the same two slightly different components.

A new project, in collaboration with the microbiology research group, is the study of the enzyme L-asparaginase, using various strains of bacteria as the source. The enzyme is important in controlling certain types of cancer.

The research group seconded by the South African Wool Textile Research Institute to the NCRL has continued successfully isolating pure peptides from wool and mohair and determining their amino-acid sequences. Wool laboratories in other countries showed great interest in this when it was presented by the officer concerned at the Fourth International Wool Conference at Berkeley, Calif., in August 1970.

ANALYTICAL CHEMISTRY

Further analytical separations have been based on the comprehensive studies of the use of ion-exchange columns carried out in this Laboratory. The leader of the group concerned has been asked to prepare a thorough review of this field for a monograph on modern analytical chemistry. A scheme worked out for silicate analysis has been successfully applied in the standardization of six South African rock samples. The method was presented at an international conference in Europe, and as a result this Laboratory has been asked to participate in analysis of samples which are to become international standards.

PNEUMOCONIOSIS

A preliminary finding was published recently that silica can cause macrophages to produce an agent which induces the synthesis of fibrous tissue. This could account for the fibrotic nodules in silicotic lungs. Confirmatory evidence has been found and further studies are in hand.

HUMAN GROWTH HORMONES

These have been obtained in a very pure form but the supply of human pituitaries is limited. The passing of the Anatomical Donations and Post Mortem Examinations Act of 1970 has not, as was hoped, improved the situation. Useful clinical products could be prepared if the supply were adequate.

CHEMISTRY OF GOLD AND PLATINUM

Through the Chamber of Mines, most of the main producers of gold and platinum have agreed to support fundamental work on the chemistry of these metals for the next 5 years. This should speed up the progress of the research program. The platinum metals are of industrial importance and are very versatile. Many interesting modifications of their properties can be obtained by forming organometallic complexes. This makes them an ideal basis for catalysts. One of the objectives of the study is to discover exactly how and to what extent various groups bonded to the metal affect its behavior. For instance, iridium compounds can take up oxygen or carbon monoxide spontaneously, and it is planned to ascertain their relative affinity for the two. Catalysis of the conversion of nitrogen to ammonia is of great practical importance.

The mode of bonding in organometallic compounds is a vital topic in modern inorganic chemistry, and an extensive review written on request by a member of the research group concerned was published in England. Also by request the leader of the group spent a year in the United States of America to guide a group of research students.

HEAT EXCHANGERS

The computer program for the optimum design of air-cooled heat exchangers has been widely used in industry. The program has now been modified to reduce

computer time. Studies have been published of variations in the heat transfer coefficients used, and further experiments are being carried out on correction factors for these in multipass cross flow. Other studies have been carried out on pressure drops for flow through turbulence promoters in parallel plate arrangements.

PARTICLE TECHNOLOGY

Radioactive tracer techniques have been used to follow flow patterns of both solids and liquids in full-scale thickeners under normal load. For liquids, such techniques are not sensitive enough over the main part of the area where velocities are low.

Computer programs suitable for desk top computers have been compiled to measure particle size by sedimentation.

Effects of floc formation in filtration have shown that existing theories are inadequate and that flocs which are suitable for thickening are not necessarily effective in filtration. Practical studies for industry are also being undertaken and special equipment has been purchased for this purpose.

NATIONAL PHYSICAL RESEARCH LABORATORY

The main function of the National Physical Research Laboratory (NPRL) is to contribute to the development of physical science in the Republic through research aimed at the adaptation of existing knowledge as well as the discovery of new facts for the solution of technological and industrial problems of national importance. In addition the NPRL has statutory responsibilities for maintaining national standards of physical measurement for mass, length, electricity, radiation, et cetera.

The facilities at present at the NPRL cater for the most essential needs of the Republic in the sphere of the physical sciences and, within the NPRL, groups of research workers from nuclei of research manpower in the following fields: optics, nuclear physics, solid state physics, acoustics, spectrochemistry, infrared spectroscopy, electron microscopy, geophysics, electron spin resonance, geochronology, oceanography, high pressure physics and natural isotopes.

It is important for any community of scientists and engineers to take a periodic look at itself and to identify its task within the society it strives to serve. During the past year the scientists of the Laboratory have given thought to how they can best serve the future industrial needs of the country in the field of physics and the related fields of research and development. With this in view the activities of research and development. With this in view the activities of the Laboratory have been combined under groups for industrial physics, earth physics, material sciences and nuclear sciences. It is hoped that within these groups joint research tasks and individual projects of a high standard and of value to the national economy will be undertaken.

APPARATUS

Instrument for noise analysis.—When investigating noise problems it is always necessary to analyse the noise into frequency bands in order to decide what methods and materials to use to reduce it. An instrument has been designed and built that analyzes the noise into one-third or whole octave bands and records the results on a strip of paper, all in less than 1 minute. This new apparatus is more accurate and versatile than the very expensive commercial equipment.

High-resolution radar.—Studies of hailstorms and lightning in the vicinity of Pretoria and Johannesburg will be boosted considerably by the recent acquisition of a high-resolution radar. Detailed reflectivity profiles of storms will be correlated with observations of surface patterns of hailstorms, cloud photogrammetry, lightning and hailstone structures. Storm models will be derived from this information. Objectives are to be able to predict the behavior of hailstorms and, ultimately, to develop techniques for the prevention of damaging hail.

Proportional counter for natural tritium.—In addition to the facilities available for determining the natural carbon-14 isotope (radiocarbon dating), apparatus to measure tritium in rain and ground-water has been installed. A program for the investigation of tritium concentrations in nature could thus be initiated.

IMPORTANT RESEARCH RESULTS

Radio techniques in tracking.—In collaboration with the National Institute for Telecommunications Research and the National Research Institute for Mathematical Sciences, miniature radio transmitters and associated receivers and antennas were developed to track animals where the nature of the terrain makes visual observations impossible. Four projects are using this system.

At Ndumu the role played by the vervet monkey in the life cycle of a particular virus is being studied by the South African Medical Research Council and the Department of Zoology of Pretoria University. At the Hluhluwe and Umfolozi Game Reserves, the Natal Parks, Game and Fish Preservation Board is studying the behavior of black and white rhinoceros. The transmitter and the loop antenna are embedded in the posterior horn and protected by a layer of glass fibre. The Transvaal Division of Nature Conservation is studying the movements of impala in the Sabi-Sand Reserve. As in the case of the monkeys, the transmitters are built into neckbands.

At the request of the Department of Transport the possibility is being investigated of developing similar lightweight equipment for locating lost persons in the rugged and inhospitable regions of Gough and Marion Islands manned by the Weather Bureau.

Antishark research.—The research into electric shark barriers is coming to an end at the St. Lucia Estuary. Different electrode systems have been investigated and a practical system has been designed. The major problems of manufacturing suitable cables have been overcome and a pilot system is to be installed at Margate on the Natal south coast.

Hail research.—The results of 7 years of observations of hailstorms in the Pretoria-Witwatersrand region have been summarized. Subjects discussed include areal hail frequency, seasonal variations, onset time and duration of hailfalls and the occurrence of soft hailstones.

An extensive, illustrated report was produced on the sizes, shapes and internal structure of natural hailstones. Large numbers of hailstones of all shapes and sizes from many storms were studied over a period of 10 years. It is now possible to make certain generalizations about hailstones.

Dating of Stone Age in Southern Africa.—By means of radiocarbon dating, it has been established that the Later Stone Age in Southern Africa dates back more than 23,000 years. This culture is thus more than twice as old as hitherto assumed.

Age of groundwater.—Carbon-14 analyses of about one hundred groundwater samples indicate that ages of more than 30,000 years are not at all unusual in Southern Africa. In these instances the recharge must be extremely slow.

An investigation of the groundwater in the southern Kalahari undertaken in collaboration with the Department of Water Affairs, showed two continuous water bodies with very slow flow rates of two and four meters per year in a westerly direction.

Deuterium content of organic material.—The hitherto unknown deuterium concentration in organically-bound hydrogen was investigated by measuring the D/H ratio in wood, peat, coal, oil, natural gas, etc. All these materials contain less deuterium than ocean water and the observed concentrations appear to be of a systematic nature. Organically-bound hydrogen in wood contains about 3 percent less deuterium than the water on which the plants grew. In peat the deuterium content decreases with increasing degrees of coalification. Coal shows no further dependence on the grade, but the deuterium content is characteristic of the deposit and can be used for correlation purposes. The same is true for oil deposits. Water and plants from the Last Ice Age contain less deuterium than contemporary samples, a result of the change in climate.

Ultradeep electrical soundings.—The results of ultradeep soundings at Pofadder and Dealesville indicate that the classical idea of a chemically-layered crust may be erroneous. The electrical results indicate that the upper and lower portions of the crust are probably of the same composition, but that the lower crust is physically different due to high-grade metamorphism and dehydration.

Fischer-Tropsch waxes at high pressure.—It was found that Fischer-Tropsch waxes at high pressure behave as if their carbon numbers increase. This makes it possible to study the properties of industrially important waxes which would otherwise be difficult to obtain in a narrow composition range.

Structure of phragmalin.—An X-ray analysis of the structure of phragmalin, a complicated natural product, revealed a marked resemblance of the molecule to limonin, a well-known bitter principle of citrus fruit, the presence of a nor-

bornane skeleton, which was not expected, and an ortho-ester linkage across a cyclohexane ring, which has never before been found in this class of natural product.

Volatile lanthanide chelates.—Some hydrated β -diketonates of the lanthanides were investigated crystallographically. The belief that coordinated water causes hydrolysis of these compounds on heating was found incorrect in the cases of some fluorinated ligands. The structural results obtained previously of the complexes of 2,2,6,6-tetramethylheptane-3,5-dione were analyzed in terms of an ionic model and good correlation with their known thermodynamic properties was obtained. The most important finding was that monomeric species show little variation in properties through the series, whereas marked gradation occurs in dimers. This is due to a variation in the energy of dimerization. Enhanced chromatographic separation can be induced by the synthesis of dimers which occur for all the lanthanides.

Oceanography.—Measurements of currents near Durban have been fitted to a model consisting of a steady system of currents flowing parallel to the coast with moving anticlockwise eddies superimposed. These anticlockwise eddies accompany the atmospheric pressure cycles that move northwards along the coast and occur at regular intervals.

The model helps to explain phenomena such as the apparent movement of the Agulhas current toward and away from the coast, on-shore and off-shore currents, variations in surface temperature and localized enrichment of the water by upwelled nutrients.

A measuring program at Richards Bay is aimed at constructing a similar model for this area and development of a universal model applicable to the whole Natal coast.

Glow discharge source.—A new type of light-source unit known as the glow discharge source was developed recently in Germany. The simplicity of the source and its operation made it ideally suited for industrial use. The Laboratory acquired one of the first commercial units and has conducted several valuable analytical projects for South African industry.

One of these was the development of a rapid and accurate analytical method to determine the silver, copper, and lead content in raw gold. It is possible to detect impurities and to determine the gold content very accurately using this method.

The source has also been successfully used to analyze brass and bronze. Not only is it possible to determine all the constituent elements directly, but a set of analytical curves set up from brass standards may be used for bronze metal analysis. The source can also analyze metals with different metallurgical histories; that is, cast, drawn, or rolled metal.

Many requests have been received from industry to explore the possible uses of the source.

Spark mass spectrographic studies.—A spark mass spectrograph installed some time ago is a valuable asset and has been used for trace characterization of South African gold, trace characterization of acid lavas and determination of their relationship to the chronological sequence of effusions from the mantle and isotope ratio determinations in inorganic materials.

ROUTINE SERVICES TO INDUSTRY

Acoustic consultations.—A considerable number of requests had been received for assistance in the planning or improvement of the acoustics of churches, schools, and halls, and several investigations into noise problems were undertaken by the Acoustics Division.

The acoustical planning of the new SABC studios in Johannesburg is the Division's largest single contract. Apart from this the opera houses in Cape Town, Pretoria and Johannesburg are still receiving attention. A new contract concerns the acoustical planning of the Randse Afrikaanse Universiteit.

Requests for advice show that large sums of money are spent on buildings which prove to be near-failures because the problems of acoustics, ventilation and lighting were not considered during the design stage. To draw attention to this an article on the subject was written in collaboration with the National Building Research Institute and made available to all church magazines. Enquiries have since been received from all over the Republic and from neighboring territories.

The existing facilities for teaching music in schools and colleges are inadequate. Very little information on the design of teaching and practice rooms was available, even in technical journals, and a preliminary guide was therefore written and sent to interested parties for comment. The reaction was so satisfying that a more comprehensive treatise on acoustical considerations in the design of music rooms was prepared.

Advice is given on noise reduction in industry and on how to design buildings to exclude noise. Three staff members of the Acoustics Division serve on the Noise Abatement Committee of the Johannesburg City Council.

Geophysics.—Work done in this field involved the practical application of seismic refraction and electrical resistivity methods. Seismic refraction surveys were carried out on a contract basis for Iscor and the Geological Survey, for example, the foundation investigation of the site for the third Iscor plant at Newcastle and a similar investigation at Vanderbijlpark.

In collaboration with the National Institute for Water Research a seismic study was made of part of the Cape Flats. This is part of a research programme to determine the groundwater potential of the Cape Flats. The seismic results showed that the depth of water-bearing sand is up to 60 m. in places and its porosity has been estimated at about 35 percent.

A deep electrical survey has been made of an area between Beaufort West in the west and Port St. Johns in the east. This investigation was carried out at the request of Soekor to determine the nature of the Beatty Ridge. This ridge, which is about 100 km. wide, is a prominent magnetic anomaly which occurs across the entire land. The electrical results indicate that the ridge is not intrusive into the Karroo rocks, but that it forms part of the crystalline basement. This is important for mining exploration.

Chemical analysis.—Instrumental methods of analysis are being used increasingly in South African industry. The NPRL is often consulted about the best methods and instruments. During the past year advice was given which led to the purchase of approximately R208,000 worth of instruments. Several studies were also undertaken on behalf of industrial organizations to establish the most useful and economical method of analysis. Many samples were analyzed for outside organizations.

MAGNETIC OBSERVATORY

Although the activities of this well-known geophysical research station at Hermanus have, from their very nature, an international character, the needs of local research workers and national organizations are also taken into account. The continuous recordings of the geomagnetic elements, cosmic ray intensity and radio noise are often used by South African and overseas research workers in related fields of study which include space research, upper atmospheric physics and geomagnetic induction. This information finds practical application in, for example, navigation by magnetic compass and the prediction of radio reception conditions.

GEOMAGNETISM

The changes in the earth's magnetic field are recorded continuously at the Observatory at Hermanus and also at Tsumeb in South-West Africa.

The Tsumeb station was established in 1964 in cooperation with the Max Planck Institut für Aeronomie (MPI, Lindau, Germany) on the site of the Institute's "Ionosphärischen Forschungsstation Jonathan Zenneck" and is run by the staff of the ionospheric station.

Preliminary tests have been carried out at the STADAN site of the Radio Space Research Station at Hartebeesthoek, with a view to establishing a magnetic recording station there. As magnetic disturbances are connected with ionospheric conditions the recordings at Hartebeesthoek will also be useful to the National Institute for Telecommunications Research.

GEOMAGNETIC FIELD-STATIONS

A comprehensive geomagnetic survey was carried out to determine the mean secular changes in the geomagnetic elements. The survey included observations at 13 new field stations in South-West Africa. With the establishment of these stations the network of primary magnetic field stations in the Republic and

South-West Africa was completed. The field workers of the observatory traveled more than 20,000 km., from Hermanus in the south to Messina in the Transvaal and Cape Fria on the Skeleton Coast. The results confirmed the change in the secular variation pattern which was observed in a recent analysis of former surveys. The data are being used to compile geomagnetic charts for the epoch 1970.0.

The trigonometrical survey office assisted in setting up, coordinating and maintaining the primary magnetic field stations, and will continue with the comprehensive program of compass observation.

AUTOMATION

The standard La Cour variometers have been provided with a servosystem which reproduces the variations in the magnetic field in analog form as variations in an electric current. A data acquisition system, developed with the assistance of the National Research Institute for Mathematical Sciences, digitizes the analog signals and stores them on punched tape.

A computer program which converts magnetogram scalings to absolute units and prints them in table form has been drawn up with the cooperation of the National Research Institute for Mathematical Sciences.

The mean hourly values of the geomagnetic elements for the last 38 years are now being stored systematically on magnetic tape for archive purposes according to the format recommended by the International Association for Geomagnetism and Aeronomy.

COSMIC RAYS

Variations in the intensity of cosmic rays are continuously registered by a neutron monitor (Type Chalk River 3-NM-64). The program is carried out in close cooperation with the CSIR Research Unit for Cosmic Rays with headquarters at the Potchefstroom University. The data are processed on the computer at Potchefstroom and published and distributed by the observatory.

The recommendation by the research unit that the monitor at Hermanus be enlarged to at least 4 times its present size, is being considered.

MAGNETIC CONJUGATE POINT PROGRAM

The program of observations at the magnetic conjugate points, Hurouqué (France) and Hermanus (South Africa) was completed in March 1970.

OZONE OBSERVATIONS

The observatory began operating an ozone recorder for the Max Planck Institut für Stratosphärenphysik in September 1970. The immediate object of the observations is to determine the latitude effect and time variations in the ozone content of the air at ground level. The 16 selected observation posts lie within a narrow longitude strip from Tromsø (Norway) in the north to Hermanus in the south.

ABSORPTION OF RADIO WAVES

The 30 MHz riometer installed at the observatory by the Air Force Cambridge Research Laboratories (Bedford, U.S.A.) in 1963 operated continuously. The records were used during the year by postgraduate students of the Potchefstroom University for research on the absorption of radio waves.

GEOALERTS

The demand for the observatory's geoalerts increased during the year. These were sent out whenever the continuous records of the magnetic field, cosmic radio noise, earth currents and atmospheric noise indicated disturbed conditions.

MAGNETIC ACTIVITY INDICES

The observatory is one of the few chosen observatories whose data are used for the magnetic disturbance indices Dst and Ks. In the monthly magnetic bulletins issued by the observatory, the disturbances are classified and described in detail.

AUXILIARY PROGRAMS

The limited seismological and meteorological programs continued uninterrupted. To prevent the disruption of the seismological readings by a local earthquake, the optical recording system of one of the Milne-Shaw seismographs was supplemented by a special electrical recording system.

ANTARCTIC RESEARCH

The observatory provides laboratory and other facilities to the research group from the Potchefstroom University which organizes the program for geomagnetic and aurora observations on behalf of the Department of Transport. The program leader is stationed at Hermanus and is assisted by a research officer of the observatory who has been seconded to the Antarctic research group.

DISSEMINATION OF DATA

In addition to the monthly and annual bulletins issued by the observatory, data were supplied on request to the Trigonometrical Survey Office, the South African Air Force and Navy and numerous private bodies.

REPUBLIC OBSERVATORY

The Republic Observatory is not limited in function to pure research in the field of astronomy in particular, but also performs duties of a civil nature, such as the maintenance of the national time service. This service is rendered to the public by means of the time signal and standard frequency transmitters. In addition, these signals are distributed by land line to the Post Office, the SABC and other institutions.

The principal long term programs of the observatory comprise observational and theoretical research in the field of visual double stars (a field recently extended to include eclipsing binaries) and photographic observations of minor planets and comets. For half a century, the observatory has been associated with these programs to such a degree that they have become almost international commitments.

The short term projects of the observatory have included the successful search for Proxima Centauri, our nearest known stellar neighbor apart from the sun, the detection and measurement of the rotation of the minor planet Eros, the observation of the "splitting" of Nova Pictoris, the publication of a photographic star atlas of the southern sky, and the preparation of a series of color photographs of the planet Mars.

LONG PERIOD VARIABLE STARS

There are a number of important astronomical research programs which tend to be neglected at many observatories. These are the ones requiring a long and uninterrupted series of observations, which is almost impossible where expensive telescope time has to be shared by a large number of observers.

One such astronomical program, which was commenced at the Republic Observatory during 1970, is the photoelectric observation of long period variable stars (LPVS).

The long period variables form a large and inhomogeneous subdivision of the family of intrinsically variable stars. Their periods range from, say, 60 days to 1,500 days, but the light variations are not strictly regular. Often one can detect only a faint indication of a period, and frequently there is no period at all.

The mechanism of variability and the atmospheric conditions within the stars are still largely unknown. Detailed information about the light variations is therefore needed and the stars have to be kept under continuous observation, that is, each star has to be observed at least once every 2 days, over a period of a few months.

Observations of about 50 of these variable stars were made during the winter months of 1970 in ultraviolet, blue and yellow light. Preliminary results correspond well with earlier results by other workers, but the data obtained so far are still insufficient, and the work is to be extended over many more seasons to gather statistically significant material.

NATIONAL RESEARCH INSTITUTE FOR MATHEMATICAL SCIENCES

The National Research Institute for Mathematical Sciences (NRIMS) is concerned with research in the mathematical sciences and electrical engineering. These two disciplines include many of the theoretical and experimental aspects of research in all scientific fields.

The Mathematical Sciences Research Department consists of divisions for mathematical analysis statistics and numerical analysis and a section for operations research. Activities cover the various branches of mathematics and their application to research. Typical fields of study are theoretical fluid dynamics, stress-deformation theory, statistical decision techniques and the design of experiments, and numerical and nonnumerical computation on digital computers.

The Electrical Engineering Research Department consists of divisions for special problems, automation, applied electronics, solid state electronics, electronic instrumentation and power electrical engineering. Work is done in such diverse fields as the application of digital techniques to data processing, analog computing, the use of ultrasonics for the analysis and processing of materials, semiconductor applications, microminiaturization and thin-film technology, and studies of problems peculiar to the Republic in heavy current applications.

MATHEMATICAL SCIENCES

Of the many basic and applied problems treated, a few examples in mathematical statistics and computing are given below.

ROAD TRAFFIC PROBLEMS

For the intended national survey of road traffic a best choice of 98 points on rural roads was made for the National Institute for Road Research. At these points traffic counts are to be taken on a fixed day of the week four times a year. Observations began at the beginning of 1970, with the cooperation of the four provincial administrations.

Systematic sampling schemes were also devised for various other projects, for example, a method of selection of road accidents for intensive study and of heavy vehicles to be tested for roadworthiness.

A statistical analysis of spot speeds of traffic measured annually at 10 points on rural Transvaal roads for 4 years, indicated that in successive years fewer people were driving at low speeds.

An experiment was designed to determine the effects of law enforcement on the behavior of drivers. This was measured by the rate at which traffic regulations are violated. The traffic departments of Pretoria and Johannesburg collaborated in the first phase of this experiment.

STUDIES OF SORGHUM

Statistical analyses made for the National Food Research Institute included one to compare the yields obtained when sorghum is ground using a rice mill, an impact mill and a roller mill with special fluted rollers. If the flour constituents, which are obtained in addition to the grits in the impact mill and roller mill processes, are not mixed with the grits, there is no significant difference between the yields. If, however, a portion of the flour constituents is mixed with the grits, the yield obtained by the rice mill is significantly lower than that obtained by the other two.

The object of another experiment on three cultivars (varieties) of sorghum grown in different regions, was to establish possible significant differences in yield due to the regions and also to the cultivars themselves. It was found that the yield of two specific cultivars differed significantly.

BIOSTATISTICS

Several statistical analyses were carried out for the nutrition clinic for children at the H.F. Verwoerd Hospital. One involved the chemical composition of breast milk of Bantu and white women. There was significant difference between the two groups. In another investigation 68 male infants with acute gastroenteritis were divided according to the diet they received in hospital, that is, a high protein and a powdered milk formula.

Statistical analysis showed that the plasma potassium values of the patients who received the milk formula returned to normal more quickly than those of the other group.

The statistical analysis of results measured by the National Institute for Nutritional Diseases showed that a certain drug had a significant effect on eight biochemical variables in a group of kwashiorkor and pellagra patients.

The leg length and upper shell (carapace) length of rock lobsters collected by the Oceanographic Research Institute, Durban, were measured. After suitable statistical theory had been specially developed for the purpose, it was found that, in rock lobsters with the same upper shell length, if this is 48 millimeters or more, the legs of a male are on the average significantly longer than those of a female.

For the National Chemical Research Laboratory it was statistically established that the oxygen intake of a group of snails diminished significantly after treatment with a certain poison.

COMPUTER CENTER

The more powerful computer which came into operation in 1969 was at first used for only a few hours a day, but it became necessary to introduce an overflow shift early in 1970. To cope with the growing sophistication of the daytime load, additional equipment has been ordered for 1971, including a satellite computer for the National Institute for Telecommunications Research in Johannesburg. This will be linked by telephone lines as a terminal to the main computer in Pretoria.

Use of the computer has been optimized in many respects, for example, a better means of obtaining graphs drawn by the computer has been provided.

A television-type screen attached to the computer was used in many projects. Various new applications of computer graphics were developed; for example, the design of electronic circuits and geometrical shapes.

NUMERICAL CONTROL OF MACHINE TOOLS

Further extensions have been made to the computer programs related to the numerical control of the CSIR's automatic milling machine. Special attention was given to methods of defining complicated (sculptured) surfaces mathematically. Several complex aircraft shapes have been machined for wind tunnel models. Two-dimensional parts can now be drawn and dimensioned on a cathode ray display attached to the computer.

DATA PROCESSING

A good deal of work was done involving data processing by computer. It originated from such varied sources as investigations into pneumoconiosis, earth magnetism, the use of scientific literature and the distribution of hailstorms.

A task commissioned by the Department of Agricultural Economics and Marketing is related to a long-term project for assessing and ultimately optimizing agricultural production. Techniques to process the monthly returns of a large sample of the farming community were developed for the preliminary stages of this project.

PROGRAMING

In collaboration with the National Mechanical Engineering Research Institute a comprehensive program has been developed for the assessment of aircraft noise disturbance near airports. The techniques and computational methods developed have received international recognition and are being incorporated in a national standard procedure.

Other programing assignments which involved significant contributions in numerical mathematics have been concerned with ionospheric studies, the eclipse of binary stars, tables of heat conduction, the simulation of process control systems, shore wave analysis, transonic flow theory, control system analysis, and the design of cooling towers.

ELECTRICAL ENGINEERING : PROCESS CONTROL

Work has continued on the simulation of the sugar refinery referred to in the previous annual report. The work related to the process part of the factory is

being done in collaboration with the Chemical Engineering Group of the National Chemical Research Laboratory. Mathematical models have been derived for the milling tandem and the evaporators.

A simulation study of a gold reduction plant is being conducted in collaboration with the mine concerned and the University of Pretoria.

DATA-ACQUISITION SYSTEMS

The Institute has for some years been designing and constructing special-purpose data-logging systems, and has on numerous occasions been consulted by outside organizations on aspects of data logging. The major activity at present is the development of a computer-controlled data-acquisition system for a high-voltage recording station, a project undertaken jointly with ESCOM and the University of Pretoria for studies on the behavior of 400 kilovolt transmission lines.

MEDICAL ELECTRONICS

An instrument to stimulate the vagus nerve electrically in the treatment of angina pectoris was tested on a patient at the H. F. Verwoerd Hospital, with encouraging results.

An instrument for cerebral electrotherapy was mentioned in the previous annual report. A second instrument, which permits the use of current waveforms with greater peak values, was constructed this year and will replace the existing instrument, which is in regular use, when the latter requires servicing or develops a fault. It is hoped that EEG measurements during treatment will be feasible when using the new instrument, and that these measurements will make the assessment of the effects of brain stimulation more accurate.

TRACKING EQUIPMENT FOR WILD ANIMALS

In the annual report for 1968 mention was made of the development of miniature transmitters for tracking monkeys and rhinoceros. Refinements were made to the receivers and transmitters initially developed in a joint project with the Acoustics Division of the National Physical Research Laboratory for tracking vervet monkeys in the Ndumu Game Reserve. Other transmitters were designed and constructed for mounting in the posterior horn of both black and white rhinoceros.

The work also includes other species of animals and altogether five receivers and 38 transmitters have been supplied for use in game reserves in Zululand, the Eastern Transvaal and Natal.

The considerable interest shown in this project when it was initiated 2 years ago, has increased, but lack of financial resources is still seriously hampering experimental work.

ELECTRICAL RESISTIVITY OF SOIL

A very well attended symposium on earthing was held in March 1970 under the auspices of the CSIR. The discussions included earthing practices, measuring techniques, the effects of corrosion, the protection of tall structures against lightning and measures to ensure safety in domestic premises. The delegates decided that it would be advantageous to meet regularly in order to keep abreast of developments and asked the CSIR to take the initiative in arranging symposia.

THERMAL RESISTIVITY OF SOIL

Development of the small, portable, direct-reading instrument mentioned in the previous annual report has been completed. It is capable of measuring the thermal resistivity of soil within less than 15 minutes and displays the reading on a meter calibrated in resistivity. The instrument weighs 3.5 kilograms and is connected to a probe which is driven into the ground to a depth of about one meter.

LIGHTNING

To protect overhead electric power systems against lightning, expensive equipment has to be installed. If the frequency of lightning were known, the most economical measures could be taken to ensure that the power supply would not be unduly interrupted. As an estimate of lightning density, the number of thunderstorm days is inadequate. Effective lightning ground-flash counters are therefore urgently required.

In previous annual reports the three direction-finding stations installed for carrying out lightning research were mentioned. For the second year running observations were made during the lightning season. Records were obtained on 46 thunderstorm days out of a total of 67, and covered 51 different thunderstorms.

To calculate the ground-flash density, the effective range of the lightning flash counter must be known. This is defined internationally as that range within which the number of lightning flashes actually occurring over a long period is equal to the number registered by the counter. The preliminary value of the effective range calculated for the standard CIGRE counter was 31.5 to 34.5 kilometers. This agrees with the experimental value of 33 kilometers obtained for ground flashes by observers in Australia using a similar counter. The corresponding ground-flash density locally would be approximately 9 flashes per square kilometer per annum, assuming that no intra-cloud flashes were recorded by the counters.

EXTRA-HIGH VOLTAGE

The automatic surge-recording station is now in operation, recording surges on an 11 kilovolt overhead line during lightning storms.

The research project on corona and radio interference undertaken in collaboration with ESCOM and the University of Pretoria has made satisfactory progress. The work includes corona investigations and the measurement of meteorological data, research on lightning and switching surges, and basic measurements of the currents and voltages of a three-phase 400 kilovolt line using current and voltage sensing antennae for an out-of-contact measuring system. The Institute has completed the computer-controlled data-logging system, including all the computer programs.

ESCOM has provided a site near the Apollo 400 kilovolt distribution station (near Irene) and will equip this with a control room for the instrumentation for comparative current and voltage measurements. The Institute has provided a data-processing computer and other measuring equipment, including a caravan which is used when corona measurements at other locations on the system are made.

INSULATION

Following an agreement with the Rand Water Board, a project was undertaken which involved measuring insulation parameters on 19 of their induction motors, to ascertain the most significant factors which might be used to predict the life of the insulation. The motors differed widely in size and age, and included 6.1 kilovolt and 11 kilovolt machines varying in horsepower from 900 up to about 3000. Some were as originally wound and others had been rewound locally. Insulation ages were up to 11 years. A report in which the results of 9 tests on the insulation of every motor are discussed, has been submitted to the Rand Water Board.

THIN-FILM TECHNOLOGY

Standard thin-film microcircuit substrates are now delivered on demand by the Institute's own manufacturing facility. Serious problems related to evaporation are no longer encountered. In addition, experimental capacitors have been made with a capacitive area of 1 square centimeter.

In view of the technological progress and the improvements in mask making which had been achieved, it was decided to attempt to make high as well as low ohmic resistors on the same substrate. Since nickel-chromium as resistive layer is useful only up to about 300 ohms per square, the literature was studied for information on a material with a resistivity of 1 to 10 kilo-ohms per square. Amongst the materials investigated, rhenium has promising properties.

The design of a monolithic integrated circuit operational amplifier was completed, and also the initial mask designs. The purpose of the project was to determine the feasibility of designing a monolithic integrated circuit by simply following instructions issued by the manufacturers, and then sending them the mask designs for further processing and manufacture of the circuits. The project also serves to evaluate the service offered by the overseas manufacturers in terms of convenience and the limitations imposed by the rules.

SEMICONDUCTOR ANALYSIS

Using metal-oxide-semiconductor dynamic shift registers, a digital memory was constructed for an oscilloscope. A similar dual-channel system was also tested. Voice pitch and amplitude extractor circuits, developed in cooperation

with the Acoustics Division of the National Physical Research Laboratory, were coupled to the dual-channel memory to determine its usefulness as a speech-training aid for the deaf. Two prototype devices have been nearly completed. One instrument will be presented to a school for the deaf.

ALARM SIGNALING SYSTEM

As an offshoot of a research project, an alarm signaling system was developed for the CSIR. This system will make it possible for three types of alarm to be signaled over telephone lines from any building on the site to a central alarm-monitoring panel. The system will also monitor the line for faults and indicate system failures.

LIGHTNING DAMAGE TO ELECTRONIC EQUIPMENT

The Department of Posts and Telegraphs has done considerable research into the protection of telecommunication channels against lightning, but the protection of electronic transistorized equipment still presents a major problem. The institute is investigating the nature of the voltage impulses which occur in power lines and power supplies, the destructive mechanism in semiconductors and the suitability of available protective devices.

NATIONAL INSTITUTE FOR TELECOMMUNICATIONS RESEARCH

Basically, the work of the National Institute for Telecommunications Research (NITR) embraces the study of natural phenomena and their effects on radio waves as well as the development of radio and radar systems for specialized applications. In addition, the Institute operates the Radio Space Research Station at Hartebeesthoek, near Johannesburg.

IONOSPHERIC RESEARCH

The Institute does research into the ionosphere and its influence on the propagation of radio waves. Monthly bulletins of ionospheric data and predictions of optimum frequencies for use in short wave radio communications are issued. The use of a digital computer in the preparation of communication forecasts has made it possible to increase the scope of these predictions and to issue long-term predictions to certain users.

Research into the various processes controlling the behavior information which can be gained from observations of airglow, the Institute has constructed an airglow photometer of advanced design.

The Institute cooperates with numerous overseas organizations by interchanging data and taking part in joint experiments. Advice has been given to several local organizations on problems involving the radiation, propagation and reception of radio waves.

MEASURING RAINFALL BY RADAR

Research into the use of radar to study clouds and precipitation continued, and further comparative measurements of rainfall by radar and by conventional rain gages on a small test site were carried out. Although the agreement between the two sets of measurements is generally good, this is not always the case. The radar is being resited and the experiment redesigned in an effort to identify and possibly eliminate some of the causes of poor correlation.

The experiment is being extended to measure rainfall over a river catchment area for a hydrological research project.

An 8 mm. Doppler radar, with modulation by a pseudonoise sequence, has been developed for use in a more fundamental study of clouds and precipitation.

LIGHTNING RESEARCH

A VHF radio system developed by the Institute has been used to track the sources of radio noise in lightning. In this system the position of the noise sources is determined by the relative times of arrival of the noise at spaced receivers. The accuracy is about 50 m. in the horizontal plane, while the vertical accuracy varies from 500 m. near the ground to about 50 m. at a height of 4 km.

The development of three inter-cloud strokes was studied in detail. Simultaneous

observations of precipitation by radar showed that in all three cases the activity appeared to occur in regions of heavy precipitation within the clouds.

DISTANCE MEASUREMENT AND POSITION FIXING

An important aspect of the Institute's work is the development of electromagnetic systems for the measurement of distance and determination of position. As a result of continued research and development by the Institute since the invention of the Tellurometer system of distance measurement in 1955, South Africa has maintained its lead in the production of such equipment.

An instrument to measure distance by means of a modulated infrared beam, developed by the institute, has been produced and marketed by a South African firm since early 1970. Cadastral and engineering surveys have shown a great deal of interest in this instrument, which can measure distances of 10 meters to 2 kilometers within 1.5 millimeters.

The institute operated the Omega VLF system of position fixing on board a research ship during an oceanographic investigation near Marion Island. The system proved accurate and reliable. The institute is now investigating the operation of the system in the differential mode, in which position measurements are corrected in accordance with simultaneous measurements at a fixed position nearby.

SPACE RESEARCH

The Institute operates the Radio Space Research Station at Hartebeesthoek on behalf of the U.S. National Aeronautics and Space Administration (NASA). The station actually comprises two major tracking stations which share support facilities, the deep space instrumentation facility (DSIF), and a station of the Satellite tracking and data acquisition network (STADAN).

The DSIF uses a 26-meter parabolic antenna to track and communicate with space probes to the moon, the planets, and interplanetary space. It has played an important role in most of NASA's deep space projects. Late in 1969 and early in 1970, the antenna was modified to strengthen the structure and improve the driving mechanism. The station is now being modified for the Mariner Mars project in 1971.

The STADAN station is one of a worldwide network of stations established by NASA to track and communicate with artificial earth satellites. The station, one of the busiest, is also one of the most reliable. New systems are being installed and obsolete equipment is being replaced.

The station has established a VLF radio link with the Republic Observatory in Johannesburg and receives timing signals from the satellite GEOS B, and can therefore keep time accurate to within 10 microseconds.

RADIO ASTRONOMY

When the 26-meter antenna at Hartebeesthoek is not required for tracking operations it is used in a program of radio astronomy. Appropriate ancillary equipment operating at a wavelength of 13 centimeters was designed and constructed by the Institute. Possible methods of extending the operation of the system to shorter wavelengths are being investigated.

The major continuing program is the investigation of intensity variations in extragalactic radio sources, particularly quasars. Seventy sources are being studied, 30 of which have been found to be variable.

A survey of southern radio sources has been carried out to detect uncataloged variables for inclusion in the investigation of intensity variation.

NATIONAL MECHANICAL ENGINEERING RESEARCH INSTITUTE

The National Mechanical Engineering Research Institute (NMERI) is concerned mainly with the development of new ideas and techniques in mechanical engineering as well as the improvement of machines and materials used in industry. The institute is also active in fields such as rock mechanics in order to improve efficiency and safety in mining. In addition the institute has testing equipment and machines, instruments and qualified personnel for research in the fields of metallurgy, strength of structures, process development, rock mechanics, aeromechanics (including aeronautics), hydromechanics (including harbor and river

engineering) and heat mechanics (including air conditioning and refrigeration).

The NMERI consists of six research divisions; namely, strength mechanics, metal mechanics, rock mechanics, process mechanics, fluid mechanics, and heat mechanics as well as three research units; namely, the aeronautics research unit, hydraulics research unit and mine equipment research unit.

The six divisions together with the aeronautics research unit are situated in Pretoria, the mine equipment research unit in Johannesburg, and the hydraulics research unit is on the campus of the University of Stellenbosch. The three units are integral parts of the NMERI and are responsible to the director of the institute.

MATERIALS DATA SYSTEM FOR METALS

A materials data system for metals is maintained by which the properties of nonferrous as well as iron and steel materials manufactured to British specifications, and many proprietary materials not meeting these specifications, can immediately be obtained. Related American and German specifications are included in a cross-reference list. A retrieval system consisting of translucent selector cards provides a simple means of access to the stored data which are regularly updated to insure that the latest information is available to industry.

TECHNOLOGICAL FOUNDRY PROBLEMS

Activities in the field of foundry research are coordinated with the South African Foundry Research Foundation via a liaison officer. This insures that attention is paid to problems of immediate interest. An investigation sponsored by the foundation into the problem of moisture loss in green foundry sands was carried out and a report has been distributed to its members. The research is being continued.

A symposium with the theme "Designing for casting" was held in Johannesburg in collaboration with the South African Institute of Foundrymen and the South African Institution of Mechanical Engineers. The participation of overseas speakers gave this symposium an international character.

PLASTIC DEFORMATION

Interest in the influence of strain rates and shock pulses on the deformation behaviour of metals has increased considerably in recent years. Forging, rolling, pressing, and extrusion can be done more economically by applying higher strain rates. Plastic deformation of high purity cylindrical aluminium specimens was studied under impact compression loading conditions using unlubricated and lubricated specimens between flat dies. The deformation mechanism was explained in terms of work-hardening theories.

WEAR TESTING OF MILL LINERS

Large quantities of metallic liner materials are consumed in milling the hard quartzite ores mined in South Africa. Knowledge of the wear rate of lining materials when milling different ores is important, since the ores differ widely in composition and physical and mechanical properties.

Extensive field tests on the performance of liner materials used in South African mines were carried out, but they were time-consuming and expensive. Tests to determine the wear rates of different liner materials with a laboratory device were therefore attempted and the results showed a good correlation with the results of earlier field tests.

SURFACE QUALITY OF FERROUS CASTINGS

The growing demands on the South African foundry industry, especially by car manufacturers in view of the efforts to increase local content of cars, have necessitated an increase in quantity and improvement in quality of castings. The surface quality of a casting is important and investigations into the properties (other than the expansion properties) of moulding materials and of moulding washes and their effect upon metal penetration in ferrous castings, were started.

STRESS ANALYSIS AND MATERIAL TESTING

An experimental stress analysis of the roof decks of large liquid storage tanks was carried out. In addition, a wide variety of static and dynamic tests were

conducted ranging from static tests on form-work panels to fatigue testing of drill rods under corrosive conditions. The most interesting current investigation is the determination of the residual fatigue life of in-service rails which are subjected to an increasingly severe loading spectrum as a result of heavier locomotives being used.

IMPACT PROPERTIES OF METALS

A literature survey was started to examine the relevant aspects of impact technology and the current areas of interest in impact mechanics. While substantial advances in and sophistication of technique have been reported in several specialist fields of impact behavior, little is known in some areas about how these can be applied in practice, for example, the establishing of criteria for the translation of basic materials knowledge into design data or specification for structural design, and the interpretation of material behavior in relation to test specimen geometry and method of loading.

ACCUMULATION OF FATIGUE DAMAGE

A project was initiated to investigate the effect of such factors as geometry, overall size and interaction between high- and low-stress levels on cumulative fatigue damage behavior under various types of random loading spectra. The long-term objective is to improve the design process and to contribute to the basic knowledge of cumulative fatigue damage. A short initial program was completed with a triangular modulation of the applied load spectrum. It is hoped that equipment will be obtained for wide-band random tests in both plane bending and axial test formats.

ROCK MECHANICS SERVICES TO INDUSTRY

Industries in the Republic and abroad made use of these services which comprise a consultative service, a rock properties testing service and a rock stress measurement service. The head of the division concerned visited Italy to advise an Italian firm of consulting engineers on rock mechanics problems.

The Rock Mechanics Information Center completed a thesaurus of rock mechanics terms for use in storage and retrieval of information. Over 1,000 articles on subjects related to rock mechanics were indexed.

A film entitled "Stressing the Point in Rock Mechanics" was produced for general distribution. The film, 40 minutes long and in full color, has been received very favorably in South Africa and overseas.

STRESS IN ROCK

The theory for determining the stress from measured changes in strain in either linearly or nonlinearly elastic rock was published and earned comment from readers throughout the world. The project will not be continued actively since the institute's doorstopper and triaxial strain cells are adequate for measuring rock stress in most South African rocks.

LARGE-SCALE TESTING OF ROCK AND COAL IN SITU

During the year ten in situ coal specimens were prepared for testing, two new hydraulic pump stations were built and all the equipment for the investigation was tested. The complete load-deformation characteristics of the coal specimens will be studied to provide practical data for the design of stable bord-and-pillar mine layouts. Further tests are planned for 1971.

This project is sponsored by the Coal Mining Research Controlling Council.

FRACTURE MECHANISM OF ROCK

An ultra-high-speed camera, which can photograph at speeds of up to 1.5 million frames per second, was used to study the fracture mechanism of rock under dynamic loading conditions. This work, conducted on behalf of the Chamber of Mines of South Africa, is still in progress.

STABILITY OF ROCK SLOPES

Finite element analysis of several problems were undertaken using computer programs developed by the institute. A two-dimensional study of the stresses in open pit mine slopes was completed. The three-dimensional stress distribution in a coal pillar was calculated.

PHORMIUM TENAX PROCESSING

The institute was approached by the Department of Industries toward the end of 1968, to assist in developing machinery for decorticating *Phormium tenax*. As only conventional jute spinning machinery was available the coarse *Phormium tenax* fiber had to be made finer. Suitable machinery was devised for this.

A new bag mill is to begin operating in the Transkei soon and has been designed specifically to handle *Phormium tenax* fiber in its natural state. It is planned, ultimately, to be able to absorb approximately one-half of the total planned production of this fiber in the Republic. The rest of the fiber produced in the Republic will be used in an existing bag mill by mixing it with jute. When the local fiber production increases, more than 30 percent by weight will have to be used and a finer, softer fiber will be required. At present this mill is experimenting with ways of refining coarse fiber. Further investigations by the institute may be necessary.

Further work is required on the efficient utilization of decorticators and the institute has purchased its own decorticating unit for experimental and demonstration purposes. Most of the decorticators built in South Africa in the next few years will probably be of one type only. An order was placed for the first production model of this machine. The first experimental machine has already been tested and during the year the institute, in close cooperation with the manufacturers, tested development models and worked on increasing output and reliability.

CONVEYANCE OF GRANULAR MATERIAL

A project on the transportation of limestone slurry was successfully completed for a cement manufacturer. The results showed that it was technically feasible to pump limestone slurry at a rate of 110 tons per hour over a distance of approximately 160 kilometers. The design of the pipeline is being undertaken overseas.

Tests on a novel dredging unit showed that the unit was less efficient than the conventional jet pump. The merits of the new device however outweigh those of the conventional jet pump especially where large solids have to be dredged since there is no flow restriction, either in the suction or in the dredger unit itself.

AIR CONDITIONING AND REFRIGERATION

Requests from architects and consulting engineers for technical assistance in the planning of air conditioning and refrigeration facilities increased. The design and commissioning of an air conditioning system for an operating theater was undertaken during the year.

Basic investigations into the chilling of meat provided design data which will enable consultants to design certain components of abattoir refrigeration systems on a sound economic basis. Work is also being done on the low-temperature friction coefficients and system pressure drops associated with abattoir refrigeration plants.

In the field of air conditioning, a milk delivery vehicle and refrigeration plants at various city council abattoirs were tested. Practical assistance was given during the capacity testing of a liquid nitrogen freezing tunnel.

Advice or assistance was also given on the basic design of comfort air-conditioning systems and temperature and humidity control equipment in a variety of applications.

HEAT EXCHANGERS

At the request of industry, performance tests were carried out on heat exchangers, evaporative condensers, and cooling towers.

Theoretical work on the basic design of heat-exchangers elements for dry cooling towers in power stations was carried out. Laboratory tests are in progress on the heat transfer rates and pressure drops across small scale models of heat exchangers of various geometrical shapes.

MEASUREMENT OF HEAT LOSS FROM HUMAN BODY

The development of instruments for the direct measurement of convective, radiative, and evaporative heat losses from a human body, as well as the design of modifications to the climatic chamber of the Human Sciences Laboratory of the Chamber of Mines of South Africa, were successfully concluded. Collaboration with the Human Sciences Laboratory will continue.

TESTING OF STEEL WIRE ROPES AND COMPONENTS

The mine equipment research unit fulfilled its main commitments, namely the statutory testing of wire ropes and the nonstatutory testing of components, chiefly for the heavier industries. Several other tests, mainly of a routine nature, were carried out for private organizations. Extensive use has also been made of this facility by mines in Rhodesia, Zambia, and other southern African states. From October 1969 to September 1970, a total of 5,087 ropes were tested.

The new 1,000 metric ton tensile testing machine which will be installed toward the end of 1971, will increase the capacity of the existing rope test facility.

SERVICE BEHAVIOR OF WINDING ROPES

The objective of this project is to evaluate the factors influencing the behavior of ropes in service, in order to improve the design of ropes and hoisting installations. Rope loading and construction, depth of wind and winding speed, etc., are being examined. Design data relating to thirty selected modern high-speed winding units are being analyzed. This project, which was originally intended to cover drum winders, will be extended to include Koepe winders.

IMPROVEMENT OF ROPE TESTING METHODS

A survey of methods used for the nondestructive testing of winder ropes in South Africa was completed and a report was submitted to the mining industry. This was followed by a manual on the interpretation of test records obtained from winder ropes while using electromagnetic instruments. A comparison of the various electromagnetic instruments currently used in South Africa was also completed.

Although no further work will be done on this project in the foreseeable future a committee, which includes representatives of the mining industry, will remain active to ensure that developments in this field are not overlooked.

FLOATING DRILLING PLATFORM

Wave tests on a floating drilling platform were carried out for a firm of consulting engineers. A model of a platform was designed and built and a theoretical evaluation of a pontoon-type platform carried out. This research is related to the search for oil at present being conducted around the coasts of the Republic.

OCEAN WAVE RESEARCH

The analysis of data collected from shore stations and ships are being streamlined and computer programmes are being written and tested. At present the only coastal area without a wave observation post is the South-West Cape area because of the scarcity of suitable sites for installing instruments. A nearshore hydrographic survey at Mōwe Point, South-West Africa, was completed to determine the nearshore contours and to provide information for wave refraction analysis. Work aimed at improving wave prediction techniques entailed a number of synoptic wave and weather observations from ships, in which the research vessels *F. H. Hughes*, *RSA*, *Africana II*, and *Thomas B. Davie* participated.

COASTAL DESIGN PROBLEMS

Numerous inquiries were received including one about the improvement of the beaches at East London and the Wilderness, the development of a yacht harbor at Plettenberg Bay and the possibility of deflecting the Mozambique current up the west coast.

Work started on an investigation aimed at improving the beaches at Swakopmund so that the town can be developed as a major holiday resort for South-West Africa. The first stage is the collection of all field data required for a movable-bed model study.

The movement of sand in the vicinity of a sea pipeline was investigated in connection with a single buoy mooring installation off Durban.

HARBOR DEVELOPMENTS AT RICHARDS BAY

Research done at Richards Bay under contract to the South African Railways requires that a layout of the new harbor be produced by mid-1971. The field team

at Richards Bay has been collecting data on waves, winds, and currents during the past year. A movable-bed hydraulic model of Richards Bay was constructed. In the first series of calibration tests, sand was used as the movable-bed material, but some of the critical tests will be repeated using anthracite to check the reliability and accuracy of the results. A fixed-bed model using an undistorted scale of 1 in 100 was also constructed. This model, covering an area of 36 meters by 60 meters, will be used to study wave conditions behind the breakwaters and to test the navigability of the harbor entrance.

SAND DAM RESEARCH

The project was initiated to determine a design code for the construction of sand storage dams. The first phase of tests on a mobile-bed hydraulic scale model of the Ondekaremba sand storage dam in South-West Africa was completed. In these tests, the influence of the form of the dam wall upon the flow velocity in the dam basin and therefore upon the settlement of fine material, which is detrimental to the efficiency of the sand storage dam, was noted. A mathematical model which describes unsteady nonuniform flow is being assembled to ascertain the most desirable height increases for a dam wall at each stage. The second phase of tests on the hydraulic scale model concerns the extent to which groynes can be utilized to influence the smaller flows which may occur in the larger water conservation schemes of the future.

MARINA DEVELOPMENT IN KNYSNA LAGOON

An investigation was commissioned to ascertain any possible disadvantages in developing a marina in the Knysna lagoon. A fixed-bed hydraulic scale model will be used in the investigation and also in finalizing the alinement of the canals of the marina. To determine the model contours, an aerial survey of the lagoon and surrounding area has been completed and a hydrographic survey of the lagoon bed will be conducted shortly. Data on the water levels at strategic position in the lagoon will be obtained from recorders.

FLIGHT DYNAMICS

Because of control vibration problems with the two-bladed rotor system of an experimental autogyro being developed by the Institute's Aeronautics Research Unit, it was replaced by a three-bladed rotor system. But since this system proved susceptible to severe and dangerous ground resonance, it was decided to study the vibration problem in the two-bladed teetering rotor system, which is safe as far as ground resonance is concerned and which, because of its simplicity, should be the ideal system.

To investigate the problem of fluctuating forces acting on two-bladed teetering rotor systems, a mobile test rig was developed which consists of a piloted, flying test bed mounted on a truck and equipped with a variable geometry rotor head which can be controlled and adjusted. It has instruments to record fluctuating control forces. The rig is suitable for testing 6.5 meter to 7 meter diameter model rotor systems. Results so far obtained indicate that control vibrations can be reduced.

HIGH-SPEED WIND TUNNEL INSTRUMENTATION

A new technique, using a numerically controlled milling machine, has been developed for the manufacture of high-accuracy contoured bodies of revolution. This technique eliminates the need for exacting manual labor. Further development is necessary for the manufacture of more complex winged models.

A locally manufactured digital computer, slaved to the main wind tunnel computer, will relieve the latter of a large amount of arithmetic work as well as of some control functions. Faster analysis of data and real-time control of wind tunnel parameters simultaneously with data acquisition will now be possible.

AIRCRAFT DESIGN AND CONSTRUCTION

A design study was made of a rotorcraft configuration with two teetering rotor systems arranged in tandem. Another design study was carried out on an ultralight aircraft, the development of which could provide a vehicle for research into special lightweight aircraft structures and high-lift producing devices on wings.

AIRCRAFT NOISE

The International Civil Aviation Organization (ICAO) requested certain of its member states, including South Africa, to submit details of their national methods of assessing aircraft noise disturbance in the planning of land use. South Africa was also invited to participate in an international exercise on the calculation of noise exposure contours around a specified hypothetical airport.

The method developed earlier by the aeronautics research unit was drafted in a modified form, and also used to calculate the required exposure contours. The presentation was submitted to the Department of Transport to forward to the ICAO.

Further modification of the method included a complete revision of the computer program used for the calculations. The new program was devised in collaboration with the National Research Institute for Mathematical Sciences, and was subsequently used in the prediction of exposure contours for 11 South African airports. The latter task, undertaken on behalf of the Department of Planning, was carried out in collaboration with the South African Bureau of Standards.

A working group of the International Organization for Standardization (ISO) met to discuss the revision, originally proposed by South Africa, of ISO methods for aircraft noise assessment. A staff member of the institute's aeronautics research unit participated in this meeting.

GUST LOADING EFFECTS ON AIRCRAFT FATIGUE

As a preliminary stage in a major research project aimed at the eventual prediction of the safe life of aircraft operating under South African conditions, a comprehensive literature survey and project planning program was started. Preliminary results suggested that the project should include various phases.

Attention was also given to the development of special recording equipment. With this equipment information on the nature of gusts and the parameters related to gust occurrence or gust strength will be continuously recorded and written on digital tape which is computer-compatible, so that analysis of the data may be greatly facilitated.

NATIONAL INSTITUTE FOR WATER RESEARCH

As water research covers such an extensive field the National Institute for Water Research (NIWR) is one of the CSIR's most diversified institutes. Research is conducted on a wide front and in various disciplines such as chemistry, botany, zoology, microbiology, civil engineering, chemical engineering and geology. The projects undertaken by the institute are generally directed toward individual problems rather than specific scientific disciplines and are often dealt with on a team basis. Apart from the main laboratory in Pretoria, the NIWR also maintains regional laboratories at Windhoek, Bellville, Durban, and Bloemfontein, as well as a Limnological Research Group at Rhodes University. The regional laboratories concern themselves mainly with problems peculiar to the areas in which they are situated.

WATER RECLAMATION

It is estimated that by the turn of the century the demand for water in the Republic will approach the limits of the available supplies. Reclamation of sewage effluent for domestic and industrial use could play a key role in the conservation and optimal use of urban water supplies. As much as 70 percent of urban water used ends up as sewage. As this is an important source of water which could be exploited the institute is conducting intensive research on all significant aspects of water reclamation.

Recently the Minister of Water Affairs, Mr. S. P. Botha, opened the Stander Water Reclamation Plant at the Pretoria sewage works. It is a large-scale experimental plant based on a pilot plant which the institute operated for about 4 years. The plant has a capacity of about 4,500 m.³ per day and will serve as a prototype in the planning of large-scale reclamation schemes in the Republic. It will also serve as a display window for promoting the idea of water reclamation with the public. The research conducted at this plant is aimed mainly at improving the economics of water reclamation. The possibility of reclaiming various types of raw water will also be determined. It has for instance been

established that the reclamation process could be successfully applied to raw sewage without any preliminary purification. The influence of shock loads of certain toxic effluents on the quality of reclaimed water will also be investigated.

WATER RECLAMATION MODEL AT RAND EASTER SHOW

A working model demonstrating the purification of sewage effluent to a point where it complies with drinking water standards was exhibited at the Rand Easter Show this year. This model formed part of the Republic's water exhibit in celebration of the Water Year.

In addition to technical problems which have to be solved before water can be reclaimed on a large scale for domestic purposes there is also the problem of public prejudice. The Rand Easter Show which is attended by such a large number of visitors was seen as an excellent opportunity for introducing the concept of water reclamation to the public in an area where reclamation is most likely to be practiced on a large scale in the future. The public response was most favorable in that the majority of visitors, after they had the opportunity of seeing the process in operation, indicated that they supported the idea of reclaiming water from purified sewage effluent for domestic and industrial use.

RIVER RESEARCH

In 1967 a series of three comprehensive reports on the quality of water in Natal rivers was published by the institute in collaboration with the Natal town and regional planning commission. River research is now being continued in Natal.

A comprehensive report has been published on a general survey of rivers in Northern Natal and Zululand. In collaboration with the sugar industry, a special study has also been made of the Nonoti, a small river which had been polluted by a sugar mill. It was established that the river quickly recovered by means of self-purification. By combining the chemical, bacteriological and biological disciplines in the study a modified and more realistic classification of rivers according to water quality was evolved.

In collaboration with the South African Sugar Association a code of practice based on the aforementioned investigation was compiled for sugar mills, indicating the most likely causes of sugar loss and attendant pollution as well as preventive measures.

USE OF ALGAE FOR REMOVING NITROGEN FROM PURIFIED SEWAGE

Sewage effluent contains large quantities of nitrogenous organic compounds which are converted into ammonia, nitrites and nitrates during the conventional sewage purification process. Not only are high concentrations of these compounds toxic to human beings and animals, but algae and other organisms grow at an abnormal rate in such water, causing secondary pollution. It is therefore important that nitrogen compounds should be removed from purified sewage before it is discharged into rivers or reclaimed.

Research is being undertaken on the use of algae for the removal of nitrogen compounds from water. A pilot plant has been constructed for this purpose and so far results have been promising.

TOXICITY OF DIELDRIN TO FISH

In collaboration with the Department of Agricultural Technical Services research is being conducted on the toxicity of dieldrin to fish. This information would be required if dieldrin were to be used on a large scale for pest control.

Comparable groups of fish were exposed to various concentrations of dieldrin in order to determine the maximum concentration which can be tolerated by fish. At the same time the influence of environmental factors, such as temperature and the concentration of salts and dissolved gases in the water, on the resistance of fish were investigated. The assimilation of the insecticide by the fish and its distribution throughout the body were also studied.

Various species of fish were used and the toxicity limits varied from 0.01 to 0.316 mg./l. Fish were more resistant to dieldrin in water at a normal temperature and their resistance weakened as the temperature rose or fell. Fish exposed to dieldrin were also less resistant to cold than usual.

STORING RECLAIMED SEWAGE WATER IN SANDBEDS

Because of the rapid socioeconomic development in the Western Cape existing water resources are being overstrained and severe water restrictions have been necessary. Particular interest is therefore being shown in the optimum use of water, the reuse of purified effluents and methods of water conservation. A survey of sewage flow in the Cape Peninsula indicated that 60 percent of the approximately 2,600,000 m.³ of water used daily is potentially available for reuse.

The institute is currently investigating the possibility of using the natural sandbeds of the Cape Flats for reclaiming and storing purified sewage effluent. The investigation is sponsored by the Cape Provincial Administration and is guided by a steering committee representing various government departments and other organizations concerned with the matter.

SERVICES TO PROVINCIAL ADMINISTRATIONS, GOVERNMENT DEPARTMENTS AND LOCAL AUTHORITIES

The institute does research on behalf of the Provincial Administrations of Natal and the Orange Free State and of the South-West Africa Administration on a long-term contract basis, and is also often approached by provincial and local authorities as well as by State departments to solve ad hoc problems in connection with sanitation, water supply and effluent control.

IRRIGATION WITH MINERALIZED INDUSTRIAL EFFLUENTS

Certain industries have to dispose of enormous quantities of effluent daily. Some types of effluent, however, cannot be discharged into public streams because of mineral pollution and another solution has to be found. Some tanneries and textile factories irrigate pasturelands with these effluents without harming the plants.

The NIWR is experimenting on this subject. Various grasses, mixed grazing and lucerne are being irrigated on test sites with highly mineralized water (more or less similar in composition to the effluents from tanneries, textile factories and paper mills) at a rate of 1,250mm (50 inches) per year. The water contains among other things, large quantities of sodium which is detrimental to soil structure and plant growth.

So far, after an experimental period of 4 years, crops are flourishing and in each successive year there is a considerable increase in crop yield. The success of the experiments may be partly ascribed to the use of soil ameliorants such as gypsum and ferrous sulphate which sustain the drainage capacity of the soil and thus counteract waterlogging.

The interaction of soil, plants and water is studied in lysimeters. Seepage water is collected, measured and analysed. The moisture lost through evaporation and transpiration is also accurately measured. The contents of the lysimeters are analysed in order to determine what percentage of the salts added have been used by the plants.

These experiments are carried out to determine whether large-scale irrigation with industrial effluents would be feasible. The results are favorable and in this way a liability could be turned into an asset.

PATHOGENIC BACTERIA, VIRUSES AND PARASITES IN WATER

The institute is studying the incident of pathogenic bacteria, viruses and parasites in the effluents from hospitals, in raw sewage, in purified effluents and in other water environments. Until now no intensive research has been conducted on these aspects and a great deal of attention has to be paid to the development of tracer techniques.

TREATMENT OF WATER FOR LOW- AND MEDIUM-PRESSURE BOILERS

No natural water is absolutely pure, particularly our underground water which often contains high concentrations of dissolved salts which make it unsuitable for use even in low-pressure boilers, (that is, those causing hardness) may remain after conventional purification and the water should be treated further before it is used in boilers.

The institute has compiled a guide to provide the operators of low- and medium-pressure boilers with information on the basic principles applicable in the selection of a method of water treatment in specific cases.

MARINE POLLUTION AND THE DISPOSAL OF EFFLUENTS INTO THE SEA

After a comprehensive report on the marine disposal of effluents off the Natal Coast was published in 1969 in collaboration with other CSIR Institutes, the NIWR continued its research on the subject, under contract to the Natal Provincial Administration.

The aims of the research are to establish more specific parameters in connection with the pollution of beaches and shallow water along the coast, to measure sea currents in the vicinity of Richards Bay with a view to the possible disposal of effluents, and to study the factors influencing the dispersal of effluents near the coast.

ANAEROBIC DIGESTION OF RAW SEWAGE

The two basic methods for the biological treatment of organically polluted water depend on the degree of pollution. If the pollution is severe anaerobic treatment is applied, otherwise aerobic treatment is used.

In the conventional biological purification of raw sewage, solids are concentrated for ultimate anaerobic treatment, while aerobic treatment is applied to the residue. However, in experiments conducted in collaboration with the Durban Municipality it was found that anaerobic treatment of the entire raw sewage flow holds great promise. This work was continued in Pretoria and after extensive laboratory experiments a small pilot plant was erected at the Daspoort sewage works. The results obtained at Durban were more or less confirmed.

Because of the nature of raw sewage and the increase in the rate of treatment, the flow pattern of the conventional anaerobic units had to be modified. A pilot plant with a capacity of 5 m.³/h is now being planned in order to determine whether this new approach of anaerobic digestion of raw sewage is feasible in practice.

FISH PRODUCTION

Experimental research, performed at the Lowveld Fisheries Research Station of the Transvaal Provincial Administration, has produced information which will enable the culture of freshwater fish in farm dams in South Africa to be based on fundamental scientific principles. New methods have established the consumption and the nutritional value of the food assimilated by the fish, the growth of potential of artificial foods and the effect of environmental conditions upon feeding habits, reproduction and growth. The data obtained may be used to increase fish production in fresh waters.

It is hoped that the commercial possibilities of freshwater fish culture in South Africa will be realized in the near future. The experimental fish used in this study was the kurper *Tilapia mossambica* which is an excellent table fish. Freshwater fish could also be used as a basic supplementary protein in feeding the growing population of South Africa.

NATIONAL FOOD RESEARCH INSTITUTE

The activities of the National Nutrition Research Institute developed in widely diverse fields from its inception in 1954 to November 1969, when its medically-orientated functions were handed over to the South African Medical Research Council. The Institute was then renamed National Food Research Institute (NFRI). Its main objectives are the study of foods, their handling, processing and utilization and their role in the diets of South Africans and to improve and augment the nation's food supply by technological development and application. A further objective is to assist South African manufacturers by providing research and process development facilities.

The CSIR Microbiology Research Group is housed in the same building and is administered by the institute. This arrangement is very convenient because of the growing importance of micro-organisms in biological food processing and the deleterious effects of microbiological contamination of foods.

COMPOSITION OF SOUTH AFRICAN FOODS

Research on the edible wild fruits and plants of Southern Africa continued.

The unidentified fatty acids in the oil of the mangetti nut were identified as α and β forms of eleostearic acid which are isomeric with linolenic acid. Eleostearic acid imparts the property of a drying oil to the mangetti oil.

The active compound in the root of the witgatboom (some Bantu tribes use the root to extend the "fresh" life of milk and butter) has been identified as methyliso-thiocyanate. The bacteriostatic and fungistatic properties of this compound are known, but the substance has apparently not yet been used as a preservative in the food industry. Little is known about its toxicity.

The fatty acid composition of samples of butter from different regions in the Republic, produced during winter, summer and autumn was determined, but little difference in the composition was found. The average oleic and linoleic acid contents were respectively 22, 24, and 26 percent, and 1.5, 2.4, and 1.5 percent. The ratio of unsaturated to saturated fatty acids in these samples was almost constant at 1:2.

FLAVOR CHEMISTRY

Groundnuts are usually cured by leaving the plants stacked in heaps on the ground after they have been removed from the soil. The quality of the nuts thus cured is very dependent on climatic conditions during the curing period, and inclement weather can result in poor quality and mold contamination.

The investigation to determine optimal conditions for the artificial curing of South African grown *Natal Common* groundnuts, which was conducted for three seasons in widely different growing and natural-curing conditions, was completed.

It was shown that controlled artificial drying could produce high-quality groundnuts. Slow drying at 35° C. to 40° C. yielded nuts of excellent quality. The most satisfactory and economical large-scale curing procedure would probably be to reduce the moisture content of 15 percent in a moderate flow of air at 35° C. to 38° C. and then to complete the drying process by reducing the moisture content to less than 8 percent, either in the dryer using air at ambient temperature or by exposure to the atmosphere in a thin layer.

Changes in composition that may take place during curing and roasting were also investigated. Only minor changes were noted and neither the oil content, the fatty acid composition of the oil nor the amino-acid patterns could be considered suitable parameters for assessing groundnut quality or the progress of curing.

To test whether the interaction of the amino acids and sugars present during roasting affects the flavor of roasted groundnuts, small quantities of various substances such as arabinose, inositol, asparaginic acid, cysteine and threonine were added to raw nuts which were then roasted. These additions improved the acceptability of the nuts.

Volatile constituents of uncured, naturally cured and artificially cured groundnuts, both before and after roasting were removed under high vacuum and separated by gas chromatography. The cultural conditions and areas and the variety of groundnut influenced the patterns. The mass spectrograph was also used to identify the components isolated by gas chromatography. So far 26 compounds were identified. Investigation of the nitrogen-containing compounds present, such as amines, is continuing.

MEALIES

Investigation of the enzymatic degradation of the starch in mealie grits continued. The use of a continuous cooker operating under high pressure simplified the process by obviating the necessity to modify the protein present by means of enzymes.

Artificial drying of mealies is becoming increasingly important as mechanization of the mealie industry increases, but because it has had undesirable effects the process is being investigated.

Information obtained by the National Institute for Nutritional Diseases of the South African Medical Research Council has indicated the desirability of enriching mealie meal with nicotinic acid and riboflavin as a prophylactic against pellagra. In a joint project with this institute the techniques involved were investigated and satisfactory procedures were recommended.

PROCESSING OF SOYBEANS

Soybeans are a very valuable source of high-quality proteins. However, the raw beans are nutritionally poor owing to the presence of undesirable substances such as enzyme inhibitors and saponins which can be removed, destroyed or rendered harmless by processing. Considerable attention is therefore being paid to finding the best method of processing this legume.

In the past the processing procedures applied in the NFRI laboratories involved soaking and autoclaving, but although the product was good, losses were high and the process was not suited to large-scale production. As a result the application of more modern equipment such as the Ultra-Rotor and various types of cooker-extruder are now being studied in order to obtain an acceptable and nutritive product.

PREPARATION OF KAFFIRCORN GRITS

The use of unmalted kaffircorn grits in the brewing of Bantu beer has decreased considerably in recent years due to financial considerations and brewing difficulties. The institute has therefore investigated procedures and apparatus to prepare grits that will meet all the objections to its use.

The main disadvantages of kaffircorn for this purpose are its high fat and wax contents and the toughness of the bran. These substances are concentrated mainly in the outer layers of the grain and the germ, which also however contain much of the valuable vitamins.

The investigation, financed by the Maize Board, was aimed at finding means of obtaining the highest possible proportion of suitable grits with low fiber, fat and wax contents, with the minimum nutrient loss. Three different processes have been developed and the beers produced using the products have been assessed as good to very good.

Two advantages of kaffircorn grits are a lower sedimentation rate and better foam control than when the usual mealie grits are used.

RAT BREEDS FOR PROTEIN EVALUATION

The nutritive values of proteins are conventionally determined by experimenting with rats. The success of the protein assayer in discriminating between the nutritive values of food proteins depends largely upon the homogeneity in the response of the rat strain employed. The greater the variability in the response of the rats in a test group, the less confident he can be of the results.

To find out whether different rat breeds do in fact differ in the variability of their response, and which rat breed would be most suitable for use in protein evaluation trials, a series of comparative studies was carried out with a Wistar-derived random-bred strain, two inbred strains (BD V and BD IX) and the first (F_1) and second (F_2) generations of a cross of the two inbred strains.

The results revealed significant differences between the rat breeds and suggested that, of the rats included in the study, those of the BD IX strain and of the F_2 generation of the two inbred strains are probably the least variable in their response to protein feeding.

TISSUE CALCIFICATION

Biological evaluation of foods includes investigations into their safety. An important aspect is the fact that some foods tend to cause calcification of certain organs such as the kidneys. To test the foods a suitable experimental animal is necessary. The ideal animal is that which, in respect of susceptibility to tissue calcification, corresponds most closely to man.

The institute has for some time been looking for a suitable experimental animal. The first phase of this work was an examination of the potential of the laboratory rat. Earlier work on the dietary conditions conducive to tissue calcification in the rat has now been extended to include data on several rat strains. These studies revealed sex and strain differences in both the susceptibility to tissue calcification and the amounts of magnesium that need to be consumed daily for prevention of tissue calcification.

UTILIZATION OF IRON AT HIGH INTAKE LEVELS

Certain foods have an exceptionally high iron content, causing tissue-iron overload. The main iron storage compounds, hemosiderin and ferritin, are stored in the liver and other organs.

An investigation into the quantitative distribution of these compounds among the various cell types of iron-overloaded rat livers showed that the hepatocytes contained almost all the ferritin, while the Kupffer cells contained almost all the non-ferritin, non-heme iron.

MICROBIOLOGY RESEARCH GROUP

A major project of the microbiology research group for the past 9 years has been the study of yeasts in order to supply data for the compilation of the second, completely revised, edition of "The Yeasts" under the editorship of J. Lodder. This monograph, which was published recently covers the taxonomy of 39 genera and 350 species. The material was contributed by 13 taxonomists in various countries. Approximately one-quarter of the data resulted from the group's investigations. The treatise will be of very specific interest to manufacturers of fermentation products and to all who are directly interested in yeast taxonomy.

It is becoming ever more apparent that, where possible, insect pests should be controlled by biological methods such as the introduction of suitable parasites or predators, by using sex attractants or by male sterilization, rather than by the application of chemical insecticides. The use of the latter frequently results in the development of resistant strains and the problem of undesirable residues in crops.

Some insects depend on symbiotic associations with microorganisms (particularly yeasts and fungi) for survival and interference with or disruption of the symbiotic relationship could be a means of biological control. Because of its active interests and experience in yeast and fungal taxonomy, the group has initiated investigation of the yeast and fungal symbionts of Coleoptera found in South Africa and in particular of those associated with indigenous trees and timber.

Considerable progress has been made with the survey of the symbionts associated with the ambrosia beetles on timber and the indigenous trees in our forests.

AIR POLLUTION RESEARCH GROUP

Air pollution has always been a threat to health. Even vegetation, buildings, and various materials are affected. In order to determine the extent of this problem in South Africa and to combat it by effective control measures the air pollution research group was formed.

The group studies the type and concentration of pollutants, dispersion processes, as well as meteorological data and has an extensive collection of pamphlets on the subject, which can be obtained on request by industries and organizations concerned with air pollution.

POLLUTANTS FROM FACTORY STACKS

A study of mathematical representations of the ways in which pollutants are dispersed from factory stacks has been completed. The results which are being processed should provide valuable information on the principles underlying the dissipation of pollutants. This information should make it possible to determine the correct heights of stacks for adequate dispersion of pollutants.

RADIO SONDE FOR MEASURING TEMPERATURE

A new lightweight radio sonde has been developed and constructed to measure the microclimate of cities more efficiently and accurately.

AIR-SAMPLING NETWORK

The national air-sampling network has been expanded to include two additional towns. Monitoring of smoke and sulfur dioxide is now being done in seven major cities and towns in South Africa.

SMOKE FROM DIESEL VEHICLES

A recent survey in Johannesburg demonstrated once again that diesel vehicles in South Africa emit more smoke than vehicles in Europe. This emphasizes the fact that control of diesel exhaust smoke is urgently needed.

IDENTIFICATION AND MEASUREMENT OF TRACE ELEMENTS

Two new studies have commenced. One is the identification and measurement of trace elements in urban and industrial environments; the other is the identification of gaseous organic pollutants so that it will be possible to detect the presence of undesirable but thus far unidentified pollutants. Some 20 trace elements, including lead, magnesium, vanadium, barium, chromium, and cobalt have been identified in the atmosphere of Pretoria.

MOBILE LABORATORY

The mobile laboratory used for the survey of traffic pollutants has now been equipped for the measurement of nitrogen oxides. The monitoring of exhaust gas pollutants will be recommenced during next year.

ATMOSPHERIC POLLUTION PREVENTION ACT

Several studies have been undertaken at the request of the Department of Health as a result of the implementation of the Atmospheric Pollution Prevention Act:

A smoke survey made in Pretoria revealed some of the primary smoke sources;

Fumigation experiments on sugar cane with hydrofluoric acid gas have produced new information on the reaction of the cane plant to fluoride;

Micrometeorological surveys were carried out at various sites proposed for industrial development; and

Engineering studies have been made by the chemical engineering group.

NATIONAL INSTITUTE FOR PERSONNEL RESEARCH

The optimum utilization of labor resources is of the utmost importance in South Africa with its acute manpower shortage, especially in respect of skilled labor. The National Institute for Personnel Research (NIPR) therefore devotes considerable attention to this problem, and there is hardly a sector of industry which has not benefitted to some extent from its work.

In any work situation there are certain factors directly affecting the worker's productivity and happiness. The NIPR is concerned with the study of these factors, which includes:

Definition of the characteristics of work, i.e., description of the job, the analysis of the physical and psychological demands made by the job on the worker, evaluation of a specific task in relation to others, and determination of the skills involved in work;

Selecting and placing the right man in the right job (by means of aptitude tests, interest tests, and others), giving him the necessary training, and assessing his performance;

Fitting the job to the man by improving working conditions and equipment;

Studying the sociopsychological aspects of work, e.g., manpower problems, social relations in the work situation, work motivation, and attitudes; and

Investigation of problems arising from maladjustment to work, e.g., absenteeism, accidents, occupation disorders, and group conflicts.

ORGANIZING AND STAFFING

There appears to be a growing need for a more formal organizational association of divisions within the institute. Although the specialist expertise of these divisions may differ they very frequently have a common interest in research projects and specific research themes. A group or program structure would insure an integrated approach to the various aspects of a research problem as well as greater continuity in projects which suffer as a result of staff losses.

During the year several members of the research staff joined university staffs or accepted attractive offers from commerce and industry. Fortunately the situation could be eased by the part-time employment of suitably qualified and experienced married women.

TRAINING

The Institute delivered over a hundred lectures and seminar contributions in the Republic and neighboring territories during the year under review.

To improve the effectiveness of training and to reduce the amount of time spent by research staff on it, training manuals on certain specialist skills have been compiled, e.g., a manual for the analysis and classification of Bantu jobs in industry. Because of the heavy demand from industry for assistance in job evaluation, research has been done in order to shorten and simplify the present NIPR job evaluation procedure. A manual on the application of this simplified procedure is being prepared. Manuals in such fields as test administration and selection will also be produced.

As not all aspects of good supervision are dealt with adequately in existing training courses for frontline supervisors a study was started in order to develop a manual for the training of such supervisors by the programmed instruction method. Three programs covering personnel management functions of the supervisor, job instruction and human relations, were developed and applied to an experimental group at a telecommunications factory. General conclusions drawn from this study were that the training manual succeeded in imparting knowledge of supervisory principles; positive changes in supervisory behavior were observed after final training; only a short training period (8 to 10 hours for all three programs) was required and the programs could be applied to individuals or to groups of different sizes; the success of such a project depends to a large extent on the active support of the management and unless the management identifies itself positively with training aims the training will have limited success and may even frustrate the worker.

Followup studies will be made in other industries, in order to demonstrate more concretely the positive effects of supervisory training on productivity.

PRODUCTION AND DISTRIBUTION OF PSYCHOLOGICAL TESTS

Since its inception, one of the main tasks of the NIPR has been the construction and standardization of psychological tests specifically for use in South Africa. NIPR test materials (and lately those of the Psychological Corporation of New York) are made available to South African test-users, who are also advised on their use. There was an increase of 20 percent in the sale of test materials for the year, without any promotive activity by the Institute.

Despite this, an investigation carried out in collaboration with the South African Institute for Personnel Management revealed a serious need in this respect, and the NIPR is taking steps to improve the position.

TECHNICAL DEVELOPMENTS

A special-purpose computer for the analysis of neuro-psychological data was commissioned during the year. The equipment can operate autonomously or with input to a general-purpose computer.

This development has placed the Institute in the forefront of neuropsychological facilities in the Republic and has established a far more precise, rapid and economic method of dealing with neuropsychological data than was possible before. It has opened up virtually unlimited research possibilities in the study of the psychological significance of electrophysiological data.

NEW RESEARCH

Every effort is made to direct new research at problems related to the country's labor shortages or at problems associated with the development and industrialization of the country's Bantu peoples.

For example, a study of female labour and its better utilization in South African commerce and industry is being planned. A comprehensive literature survey was made and research areas which seem to warrant a high priority are the greater use of married women, and the fuller use of female labor in high-level occupations.

The differentiation of mental abilities during the development of Bantu children is being studied. The effect of urbanization and increasing literacy on the differentiation of mental abilities amongst adult Bantu males is already being studied as part of the South African contribution to the International Biological Program but the most meaningful results will be obtained from a study of rural Bantu children. A project aimed at stimulating the differential development of mental abilities is presently planned in collaboration with the Department of Bantu Education and as a complementary study to work being undertaken by Educational Testing Services in Princeton, U.S. findings from

this research may contribute to the accelerated development of the Bantu people.

SHORTAGE OF BRICKLAYERS AND PLASTERERS

In 1969 the Institute was approached by the Industrial Council for the Building Industry (Transvaal) to investigate the current shortage of bricklayers and plasterers in the Transvaal.

Three main areas were investigated; namely, the causes of the shortage, the feasibility of a two-phase training scheme and the possibility of integrating the trowel trades. During interviews, opinions on these points were obtained from employers, the trade union concerned, educational authorities and the Master Builders Association.

Proposals were made, relating, among other things to:

The need for a greater awareness of personnel management responsibilities on the part of employers and the building industry as a whole.

The introduction of two-phase training. The first phase would aim at providing basic skills within 18 to 24 months. The second phase would add a career element to the trowel trades. The ambitious and/or exceptionally competent worker would be able to progress to full tradesman status and ultimately supervisory or managerial status.

The need for greater communication and coordination between interested parties in the industry.

Less fragmentation during the training of artisans.

The need to take into account long-term implications when implementing short-term solutions.

Subsequently, an attitude survey was conducted through the post. It would appear that principals of technical high schools and special schools favor the proposed two-phase training scheme and estimate that if the first phase were implemented, the number of boys from special schools entering the building industry would double. Because the second phase offers great possibilities for boys from technical high schools, the building industry should in future be able to attract more of these youths. The reasons given for the unpopularity of bricklaying and plastering, in particular, are lack of security and status, poor working conditions, wage insecurity and changes in work site. It would also appear that the unpopularity of certain trades derives from the poor image of those trades rather than from the work itself or from working conditions.

APPLIED SERVICES IN BANTU LABOUR UTILIZATION

For several years, there has been a steady demand from secondary industries for NIPR investigations into the management and utilization of their Bantu labour.

This year a number of followup studies were carried out which confirmed that the stability and productivity of Bantu industrial labour could be considerably enhanced by introducing a system of scientific job classification, coupled with occupational placement based on performance in NIPR classification tests.

The NIPR system makes it possible to compare, with some accuracy, jobs in different sectors of the economy in terms of skill required. This opens the way to developing a taxonomy of jobs performed by Bantu in industry on a regional and possibly on a national scale. It may also be possible to relate job complexity to scores on appropriate NIPR tests. Tentative findings from other studies suggest that the work motivation patterns of Bantu industrial labour are not, as yet, very complex. Thus test scores alone may be sufficient for effective placement of this labor. Such a system could improve the industrial efficiency of Bantu labor significantly.

CONTINUOUS WORK TESTS FOR ILLITERATES

An experimental series of practical performance tests has been designed and constructed in the Institute to measure sustained effort on a repetitive task, a feature of the motivational aspects of personality. The tests are intended specifically for illiterates. This research is relevant to repetitive work in industry.

BANTU LABOUR IN URBAN AND BORDER INDUSTRIAL AREAS

A long-term study of possible differences in stability and productivity between Bantu in urban and border industrial areas was undertaken at the instigation of,

and in conjunction with, the Department of Planning and the Industrial Development Corporation.

Field work for a pilot study was carried out in an organization which had branches in urban and border areas which, for all practical purposes, were comparable in respect of management, production methods and composition. Comparative results revealed that absence rates for workers of both sexes in the two areas were not significantly different.

However, separation rates for men in the urban area were nearly twice as high as those for men in the border area, while separation rates for women differed little.

A study is being made of two other textile factories which are larger than the factories in the pilot study and make different products from theirs. This project will not only be of practical value in the establishment of border industries, but will yield valuable information on the effects of cultural influences on performance in industrial situations.

WORK MOTIVATION IN AN ETHNIC GROUP IN CULTURAL TRANSITION

A multidisciplinary investigation of Venda males formed part of South Africa's contribution to the human adaptability section of the International Biological Program. The aim of the study was to trace the development of needs and their role in work motivation in a Bantu group in transition from a rural-traditional to an urban industrial environment.

This was probably the first study of its kind undertaken anywhere in the world. Most work motivation studies have been carried out in Western industrial surroundings among people in specific employment. This investigation was made with a sample of vhaVenda, the majority of whom, even when they were urban residents, were rural-oriented.

The theory on which the study was based was that of Maslow's need hierarchy, which postulates that human beings have certain basic needs. The five needs from lowest to highest are physiological, security, affiliation, esteem and self-actualization.

The results support earlier findings of the NIPR that among Bantu employed in mining and industry, although physiological needs are never entirely satisfied, higher needs are nevertheless present. The affiliation needs of many of the vhaVenda seem to be completely satisfied, and security needs were not strongly manifested. The group as a whole was oriented toward the physiological and esteem needs. There are indications that age and marital status influence motivation.

The results indicate that further analysis of the data is necessary.

SELECTION OF CSIR SCIENTIFIC STAFF

Since 1966 the NIPR has made an intensive study of the criteria used in the selection of CSIR staff. At present particular attention is being paid to a more effective differentiation between various occupational groups in the CSIR, particularly the various scientific careers, and the demands made on research workers by the level at which they have to function. The nature of the intelligence required is also being studied intensively.

A report on the problem and theory of adult intelligence (with particular reference to the scientist) was submitted during 1969. This year reports on the intelligence of the librarian and on the intelligence and personality of the executive appeared. Two further studies are nearing completion; namely, job evaluation studies carried out in the National Research Institute for Mathematical Sciences, and analyses of available test scores (in terms of age groups and specific scientific occupations).

Preliminary results suggest that there are significant differences between individuals in one scientific occupation and individuals in another. These findings are being studied in order to increase the effectiveness of CSIR selection procedures.

NIPR LIBRARY

The library, which is a branch of the main CSIR library in Pretoria, houses literature dealing with the behavioral sciences and also has a large collection of works on ethnic studies, and on mathematical statistics and computer science. The stock consists of approximately 6,500 books, 3,500 pamphlets, and 3,000

volumes of bound periodicals. The institute subscribes to approximately 250 periodicals. Certain documents; that is, theses and unpublished reports from abroad, which are otherwise not obtainable in the Republic, are available in microfilm or microfiche form.

The library's services are available both to the institute's own research workers and to those from outside the institute, as well as to businessmen, personnel officers, industrialists, and students working for higher degrees.

Apart from its routine activities, the library prepares bibliographies on select subjects at the request of staff members and assist them in organizing their bibliographical references prior to publication.

During the year, the library's work was hampered by a continuous staff shortage and its activities had therefore to be restricted almost entirely to routine matters. Nevertheless, it coped adequately with the marked increase in the number of borrowers.

NATIONAL INSTITUTE FOR ROAD RESEARCH

The research program of the National Institute for Road Research (NIRR) is strongly oriented toward finding solutions for a wide range of problems encountered by road and traffic authorities. Its chief aim is to develop economic construction and maintenance methods to insure better and safer roads and streets in the Republic. Fields of research include soil conditions; the stability of high embankments; roadbuilding materials, both natural and manufactured; the design of road foundations; the evaluation of existing roads and methods of improving them; bituminous materials and road surfacings; development of techniques and instruments for controlling roadbuilding processes; road economics; traffic engineering and road accidents.

The work of the institute is done in close collaboration with national and provincial road authorities, the Southwest Africa Administration, the South African Railways, the National Road Safety Council, and industry, which, together, provide most of the funds for road research. In addition, the Rhodesian Ministry of Roads and Road Traffic is affiliated to the institute and also makes annual contribution to research costs.

NEW SOIL COMPACTOR

To strengthen soil it must be compacted. Many different machines have been devised to do this—rollers with steel wheels and drums, rollers with rubber tires, tamping rollers, sheepfoot rollers and so on. But all these machines rely on the weight of the equipment to produce compaction. To achieve the depth and degree of densification required by modern engineering practice in such works as dams, railways, and highways, this conventional equipment has been made increasingly heavy. Pneumatic compactors with a mass of 50 ton are in common use.

However, lighter masses used dynamically produce more effective densification than heavier masses simply resting or traveling slowly over the surface of a soil. Machines which are made to jump a few centimeters off the ground by compressed air or exploding gas are used for compacting earth in trenches. The dynamic effect is also used in vibratory compactors. These dynamic compactors are however limited as to the depth to which they penetrate, or the volume of soil compacted per hour.

Pursuing earlier work of a staff member, the institute has further developed and tested a noncylindrical roller, which when pulled over a surface delivers a series of high-energy impacts and can cover large areas at a relatively high speed.

Trials with a five-sided prototype and a four-sided commercial version of the impact roller have confirmed the validity of this concept of compaction. Comparatively high densities are being achieved to a depth of as much as 2 meters below the surface.

The South African Inventions Development Corporation handles development, patenting and commercial exploitation of the impact roller, and the institute evaluates new test results.

IMPROVED ROAD TARS

Tar, a byproduct of coal, is used in road construction, but not nearly as extensively as bitumen, a byproduct of distillation of crude oils. This is because tar is inferior to bitumen as a roadmaking material.

As it is desirable for South Africa to make the maximum possible use of the locally available products, improving tars to make them more suitable for use in roads is important. In the Witwatersrand area coke-oven tars are available quite cheaply from the steel industry.

Research at the institute and overseas had shown that adding 1.5 percent of polyvinyl chloride (PVC) to tar imparts elastic and adhesive properties to the tar (to improve its general weathering properties and the retention of chippings to the surfacing) while only fractionally increasing the cost of the material. Although bitumen is very durable calculations which take into account differences in price show that it may be more economic to resurface a road every 7 years with tar than every 10 years with bitumen.

Experiments have shown that for the PVC to be effective the amount of volatile oils in the tar must be limited. In this respect existing tar specifications are inadequate and the institute has drawn up a new tentative specification. If this is successful after a trial period the existing SABS specification may be revised.

In early full-scale road experiments difficulty was experienced in blending the PVC with the tar, but as a result of recent laboratory work and pilot plant investigations these difficulties have been overcome and the institute has advised manufacturers on the most effective techniques.

The earliest successful test sections were laid in February 1969 on the national road between Newcastle and Volksrust, and since then PVC-tar has been used in many parts of South Africa, Rhodesia and Mozambique.

TECHNICAL RECOMMENDATIONS FOR HIGHWAYS

To improve the dissemination of research findings to the road industry and to keep practicing engineers aware of current good practice in highway engineering, the Institute collaborated with the road authorities in establishing a new series of documents entitled *Technical Recommendations for Highways (TRH)*. These documents describe briefly wellproven guidelines developed from South African and overseas research and practice. Either the Institute or one of the road authorities prepare the documents, which are then approved in detail by a committee comprising representatives of all major road authorities. The first document in the series, *TRH 1—Guide on prime coats, tack coats and temporary surfacings for the protection of bases* was published in 1970, and drafts of another four were submitted to the committee for consideration and approval.

VEHICLE VIBRATION ON BEN SCHOEMAN HIGHWAY

The Institute was asked by the road authorities to investigate the problem of vehicle vibration on the Ben Schoeman Highway between Pretoria and Johannesburg after numerous complaints had been received from motorists.

Two methods were used to investigate the cause of the vibrations. First, geophones were mounted in test vehicles to detect the vibrations, and the results were evaluated in relation to the rolling circumference of the wheels of the vehicle. Second, a representative length of the road was leveled at 0.3m intervals using a precise level to determine whether there were any regular undulations in the surface profile of the road that could be causing the vibrations.

As the whole 18km length of south-bound carriageway showed the same pattern of measured vibrations, it was assumed that the 200m long test section chosen was representative of the road. The precise level measurements over this section indicated that the surface profile had been built to a high standard of evenness and that there were no regular undulations that could cause the resonant type of vibrations experienced at certain speeds with certain types of vehicle.

The wavelength of the measured vibrations coincided to within 4 percent of the rolling circumference of the wheels of the test vehicles with different wheel diameters and the recorded geophone traces showed isolated irregular peaks that were larger than the average. These peaks corresponded with larger-than-average undulations in the measured surface profile such as at construction joints. Undulations of the order of 1mm over a 2m length could just be detected with the geophones.

It was therefore concluded that vibrations felt at relatively high speeds on this road are caused by imperfections of vehicle wheels and not by unevenness of the riding surface.

ROAD AND TRAVELING TIME

Two main roads linking Pretoria with Johannesburg and with Bronkhorstspuit have recently been supplemented by two new dual-carriage highways. The time saved by through traffic using these new roads has been estimated from observations of traveling times of motor vehicles on the old and new roads.

The average traveling time for all types of vehicle was 8 minutes less per 22 miles (32.5km) on the Ben Schoeman Highway than on the old Pretoria-Johannesburg road, and on the new Pretoria-Bronkhorstspuit road it was 3 minutes less per 23 miles (36.8km). For commercial vehicles on the Ben Schoeman Highway the average time saved was 1½ minutes over 11 miles (17.6km).

The significance of these apparently small savings in time may be illustrated by considering the estimated saving in cost which they represent for commercial vehicles alone on the Ben Schoeman Highway. Data collected by the Institute indicate that for a commercial vehicle the value of time saved is about R4.00 per hour. Assuming that there are 2,000 such vehicles per day the total time saved over 21 miles (33.6km) is 150 hours per day. Over a 300-day year the saving therefore amounts to R180,000.

TRAFFIC ACCIDENTS AND RESEARCH

The numerous suggestions put forward from time to time, especially after holiday periods, on how to reduce the number of road accidents, and particularly the casualties, shows that the problem exercises the minds of many thinking people. But these suggestions are often based on individual opinion and unproven theory and it is clear that finding a solution to the problem—which is a world problem—demands more than common sense and ordinary knowledge.

Knowledge gleaned from research at the Institute and overseas which might reveal the best methods of reducing road accidents, has been summarized in a recently published paper.

Pedestrians form the largest group of fatalities in South Africa, viz: 42 percent, approximately two-thirds of whom are killed in urban areas. Passengers in motor vehicles form the second largest group (27 percent), the majority of whom are killed in rural areas.

Detailed investigation by a small team from the Institute into some 160 accidents has shown the extreme complexity of accident investigation and analysis. The findings are, however, yielding useful pointers to the causes of accidents; besides driving dangerously, e.g., not stopping at stop signs, traffic lights and yield signs, drivers often fail to perceive hazards and many manage their vehicles badly in emergency situations such as skidding. Many pedestrians are involved in accidents as a result of running across streets heedless of traffic.

It was found that 54 percent of the road users involved in night-time accidents had consumed alcohol; in daytime accidents the percentage was only four. Results of an overseas research project concerning alcohol and accidents suggest that drivers with a blood alcohol level exceeding 0.08 percent are more frequently involved in accidents than drivers with a lower level.

Very little information is available on the relation between speed and accidents in South Africa, but there is evidence from research in other countries that the imposition of speed limits, where previously none existed, reduced the number of accidents, involving injuries and fatalities.

A study of the effect of road alterations on accidents has shown that some types of alteration decreased the number of accidents while others increased them. This shows the need for a scientific study of proposed alterations before the changes are made. A way must be found to compare the effectiveness of different alterations in reducing accidents.

Since so many different factors play a role in accidents, no single course of action by any authority—which is often all that can be undertaken because of limited funds—can be expected to reduce accidents to any great extent. Nevertheless, facts gathered by the Institute can be used by the authorities to prevent accidents. Important points are: Programs to improve roads based on the systematic use of accident data; education of all road users with emphasis on the dangers of alcohol; improved vigilance of drivers and pedestrians; increased use of safety belts and intensified enforcement of the law in respect of excessive speed and driving under the influence of alcohol.

NATIONAL BUILDING RESEARCH INSTITUTE

The National Building Research Institute (NBRI) is essentially an applied research organization working in close contact with the building and construction industries, the associated professions and related Government and private sector organizations. Its activities include the improvement of building design and services; structural and foundation engineering; investigations into the lighting, ventilation, heating and cooling in buildings, and the performance of building materials such as concrete, stone, paints and plastics; planning of schools, hospitals, and housing for all population groups; studies of the fire resistance of structures and materials; and work in the fields of building management, organization, industrialization, and economics.

About R1,500 million is spent annually in South Africa on building and construction (excluding roads). The success of the institute in providing this massive industry with scientific and technological knowledge which will enable it to meet the problems posed by the rapidly increasing population and growing shortage of skilled labor, depends upon its not only meeting day-to-day demands for immediate and ad hoc assistance but also studying basic problems and long term needs and requirements.

A shortage of qualified manpower and of funds make it increasingly difficult for the institute to fulfill both these requirements satisfactorily. It is also essential that research findings be applied practically throughout the industry as soon as possible. This needs a dynamic coordinated program of information dissemination directed at all levels of the industry and the associated professions.

BUILDING AND CONSTRUCTION ADVISORY COUNCIL

The institute collaborates closely with the Building and Construction Advisory Council, with the director serving both on the council and on its executive committee. A scheme, based on a levy on new building and construction in the country in order to provide additional funds for building research, is being considered by this council. The Minister for Community Development and Public Works has approved such a levy in principle and final details are being worked out. Sponsored work undertaken on behalf of the council deals with building statistics, the demand for housing and the rational use of computers in the building industry.

REGIONAL OFFICES

The institute's regional offices are providing valuable services to the building industry in their localities. The post of Regional Officer in South-West Africa has finally been filled.

COMMITTEES, CONGRESSES AND SYMPOSIA

During the year staff members worked on 125 committees serving the building and construction industry.

The institute, in collaboration with other bodies, sponsored three conferences held in conjunction with two building exhibitions in Johannesburg and staff members presented papers at each of them.

A successful symposium on combating the deterioration of building materials in coastal areas, organized by the NBRI was held in Durban during September.

Members of staff participated in a further 12 conferences in the Republic and contributed four papers.

FILMS

A television film on certain of the institute's activities was produced by the SABC Film Service and shown on Rhodesian television in the weekly series *The South African Scene*.

The attendance figures for NBRI films (English and Afrikaans versions) on the national circuit are as follows: *Building on Expansive Soils*—540,000; *Air Flow and Building*—320,000; *Living with the Sun*—210,000. In addition, approximately 20,000 people see 16mm. copies of these films each year.

PREFABRICATED BRICK PANELS

The patented process developed by the institute for the manufacture of prefabricated brick wall panels is now being used in industrialized building. This

represents substantial progress. The project is partly sponsored by the South African Brick Association.

One of the country's largest brick manufacturers, which installed prototype equipment based on NBRI designs for the manufacture of brick panels, erected a prototype house in 6½ hours from foundation level to the laying of carpets. The window frames, electric conduits and water pipes were all huilt into the panels at the factory. The inner walls were delivered to the site plastered while the outer walls were of high quality face bricks. The prefabricated roof was lifted onto the house by crane. The house was based on a design system for brick panel house construction developed by the institute.

The same company prefabricated the brick panels used in the construction of a large school at Benoni.

The NBRI process of rapid and effective consolidation of the mortar by high frequency vibration and suction to remove excess water is in advance of techniques developed elsewhere. Numerous overseas inquiries are received for information on the technique and the rights concerning its use.

MULTISTORY LOAD BEARING BRICK MASONRY

The use of load-bearing brick masonry instead of reinforced concrete framed structures in the construction of multistory buildings such as hostels and blocks of flats has attracted much attention recently. The Institute has therefore studied relevant literature and could advise consultants and the local authority concerned in connection with several buildings that are being constructed in this manner. It has been found necessary to stress that much higher standards of detailing, preplanning and site control of materials and workmanship is necessary than with normal brickwork.

RESISTANCE OF WINDOWS TO WIND AND RAIN

As a result of a contract investigation, a new and improved set of standards has been drawn up for windows in high buildings in Durban. The improvements deal principally with simulation of the combined effect of rain and wind conditions that are met in practice. It has been found that pulsating wind pressures have a considerable influence on the water penetration properties and that the constant wind pressure differences previously recommended for performance tests place unnecessarily high demands on a window set. From an analysis of wind-speed measurements carried out in Cape Town it appears that the amplitude of the gusts of wind can be from 30 to 40 percent of the mean wind speed. The investigations have led to the development of a type of sliding sash window which, according to tests on a prototype model, will not leak in severe rain and wind. This development has been patented.

ARCHITECTURAL PLANNING

Wound infection is a major problem in surgery. The British orthopedic surgeon, John Charnley, first used the clean operating enclosure principle with dramatic reduction in infection rates in surgery to the hip. Enclosures of this type have also been developed in industry for dust and bacteria free assembly of space research components. The institute's architectural division drew on both these developments to devise, in collaboration with the Transvaal Department of Hospital Services and the National Mechanical Engineering Research Institute, a facility of this sort at the H. F. Verwoerd Hospital which can be used for most, if not all, types of surgery.

A highly efficient filtration system combined with laminar-type airflow permitting 360 air-changes an hour (as compared with 15 changes an hour in a conventional theatre), insures that organisms liberated from staff or objects within the plastic-sided enclosure, are drawn into the airstream and evacuated. Persons needed directly at the operation site are in as clean an environment as possible. The anaesthetist and other theater staff are outside the enclosure but can see all the activities within. The unit at the H. F. Verwoerd Hospital has been in use since August.

It is possible to manufacture sterile enclosures as portable units, and as such, their value in remote areas and for military use in the field will be considerable.

Precooked frozen food systems were also studied and a pilot scheme using one of them was introduced at the H. F. Verwoerd Hospital. The CSIR itself

also adopted this system for providing meals to staff in its institutes and laboratories at its research center, Scientia, in Pretoria.

Hospital supply and disposal systems, architectural techniques to cope with growth and change in hospitals, and natural ventilation in large but compactly designed hospitals were also studied.

Other current projects cover the planning implications of the use of new audio-visual media in schools, design management and design brief information in the execution of the state building program, functional improvements in the design of post offices and followup studies of experimental houses erected in Ovamboland and the Namib Desert.

LOW-COST HOUSING

The results of the socio-economic survey of Bantu housing, undertaken by the Institute for Social Research of the University of Natal, are being interpreted preparatory to the reassessment of standards of low-cost housing and urban planning.

CONCRETE TECHNOLOGY

Investigations into the problem of plastic shrinkage-cracking of concrete showed that this was not attributable to either the chemical composition of cements used in the test program or to the effect of different percentages of slag in the cement content of a concrete. Various methods of preventing plastic shrinkage-cracking will be investigated.

Investigations into the accelerated testing of concrete gave rise to certain difficulties in determining the confidence limits within which the results could be presented statistically. However, from strength tests carried out on 1-day-old concrete specimens subjected to heat treatment in water, an estimate of the 28-day strength could be made within 10 percent if only one type of cement is considered and within approximately 15 percent, irrespective of whether the cement is ordinary Portland cement, Portland blast furnace cement or rapid-hardening Portland cement.

STORAGE OF CEMENT

Work on the long-term storage of cement in a silo showed that if the volume of cement withdrawn is automatically replaced by dry nitrogen gas while the silo is kept under slight gas pressure, there is no detectable change in the quality of the cement after 3 years.

PLUMBING SYSTEMS

The introduction of the British system of single-stack plumbing in the construction of multi-story buildings in South Africa is still being investigated. Single-stack plumbing is essentially an unvented one-pipe drainage system. Its two main advantages are that it costs about 50 percent less and requires less duct space for pipework than the conventional systems.

Having been recommended to do so, local authorities permitted single-track plumbing on a trial basis in some multi-story buildings. Some installations, however, have not functioned satisfactorily because the design requirements have not been strictly adhered to. Every effort has been made to enlighten the appropriate authorities on the requirements.

EVALUATION OF NEW MATERIALS, COMPONENTS AND BUILDING METHODS

The NBRI is the evaluating agency for the Agrément Board of South Africa. In the first year 35 firms formally applied to have their products evaluated with a view to obtaining a certificate. Twenty-five projects were referred to the NBRI for preparation of evaluation offers, 10 of which were processed and conveyed to applicants. Work on several of these was proceeded with.

INORGANIC MATERIALS

Numerous enquiries were dealt with on deterioration resulting from the ingress of moisture or undue exposure to moisture of inorganic building materials. Failures were caused by dimensional changes due to fluctuations in moisture content and crystallization of soluble salts, by chemical reactions and by the incorrect application of materials and lack of basic knowledge of their behaviour.

Overseas reports indicate that concrete made with some impure dolomites and dolomitic limestones expands and disintegrates in alkaline solutions. As dolomite

aggregate is frequently used in concrete in South Africa, it was decided to ascertain whether local dolomites behave similarly. After 5 months submersion in alkaline solutions the concrete specimens have not expanded or disintegrated but the local dolomites dedolomitize slowly in caustic alkaline solutions, as was expected.

Sand containing mica is often the only sand available for building over large areas in South Africa and particularly South-West Africa. Very little information is available on the performance of concrete, mortar, plaster, sand-cement bricks and calcium silicate bricks made with sands containing mica. The mineralogical, chemical and physical properties of micaceous sand are therefore being studied. Work is also being done to determine the creep properties of concrete made from aggregates containing mica, as there are doubts about the suitability of such aggregates for prestressed concrete.

It is extremely important to match a ceramic body and its glaze, particularly in a rapid firing process, in order to avoid failure. With this in mind the development of suitable tile bodies and glazes from South African raw materials for rapid firing was undertaken. Several suitable combinations of tile body and glaze have been developed.

OPERATIONS RESEARCH IN BUILDING AND CONSTRUCTION

A pilot project in which network analysis was used for the scheduling of a CSIR contract was completed. The purpose of this project was to improve the control and management of the building project and at the same time to develop the facility for critical path analysis, both manually and by computer, and to identify the factors responsible for the success or failure of the scheduling technique. This study showed the need for a proper organizational framework within which the project management function can operate.

The use of network analysis to assist in the management of the cash resources of a multiproject building program is also being studied.

SOLAR SHADOWSCOPE

Two improved models of the NBRI's solar shadowscope for investigating sunlight and shade problems of buildings were developed: One for laboratory use and the other for general use. Both are sturdier than the old model and can be adjusted more accurately. Considerable overseas interest has been shown in the new models.

DESIGN WEATHER DATA

Substantial progress has been made in the determination of design weather data for various centers in the Republic, South-West Africa and Botswana. These data are invaluable in the evaluation of the thermal behavior of various structures as well as for the calculation of heating and cooling loads of buildings and include information on hourly values of dry-bulb temperature, humidity, wind speed and direction, and solar radiation intensity. This work is based on basic climatological data obtained over a period of 5 years.

A complete set of tables covering horizontal and vertical shade and solar altitude angles, solar azimuth and angle of incidence of direct sunrays on a vertical plane, is now available for 16 different orientations for the first and 15th day of every month for every 2 degrees of latitude between 18° and 34° south. The great demand for these tables indicates their value in calculations for the sunlight and shade design of buildings.

PAINTS AND COATINGS

Much valuable information has been gained about pigment/binder ratios in emulsion paints and it is hoped that this will contribute toward a better understanding of the problems encountered in practice.

Work with a view to developing heavy textured coatings for use over precast or off-the-shutter concrete is also progressing well.

Investigations into coatings for timber lay particular emphasis on clear or lightly pigmented coatings. It has been proved both locally and overseas that completely clear coatings seldom serve their purpose for more than 18 months. Water-repellent stains that are lightly pigmented and gradually erode away instead of chipping and flaking, are recommended because although their useful life is about the same as varnishes, they are easier to maintain.

Work was also done on the use of emulsion prime coats for timber and it was found that if the timber is pretreated with drying oil, the emulsion primers are satisfactory.

POLYURETHANE FOAMS

The thermal degradation of polyurethane foam and the release of chloride ions by polyurethane foam in moist conditions have been studied. The identification of the combustion and thermal decomposition products of polyurethane foam will, it is hoped, dispel some of the doubts about the fire hazard involved in the use of this material as insulation in buildings.

The release of chloride ions by polyurethane foam stems to a lesser extent from the use of compounds containing chlorine in the manufacture of the isocyanate raw material and to a greater extent from the use of chlorinated organophosphate fire retardants. Since soluble chloride ions in the foam often rapidly corrode steel with which the foam may be in contact, this could be a potentially dangerous property of the polyurethane foams as they are often used in sandwich constructions between galvanized steel sheets.

FOUNDATIONS ON EXPANSIVE SOILS

Many inquiries received by the Institute deal with the problem of buildings on expansive clays and over the years this problem has been examined. Buildings on expansive soils constructed to NBRI recommendations suffered only minor damage over a period of 18 years while other buildings in the same area were severely damaged.

Although research in this field throughout the world has tended to stagnate there are still areas in which more knowledge is essential. One of these is the relationship between the different factors affecting heave. Some of these factors had been studied here and in other parts of the world but as it was felt that more exact criteria for the design of structures founded on expansive soils were needed, the institute started an investigation to correlate the effects of all the factors concerned. The initial studies are restricted to the laboratory testing of undisturbed and remoulded samples of one soil type but the program will later be extended to other soils and field testing.

Moisture redistribution is a critical factor in soil heave and the regional study throughout the Republic and South-West Africa on soil moisture redistribution under covered areas in relation to climatic factors has continued. The computer processing and plotting of experimental data for the various test sites was updated and the existing computer program library was modified and extended to include the use of a time scale and rainfall histograms.

REINFORCED AND PRESTRESSED CONCRETE

The strength and elastic properties of microconcretes for small-scale structural models, in which aggregates such as norite and river sand were used, were investigated. The results indicated that the characteristics of a normal concrete could be closely simulated by several microconcrete mixes. It was also found that it is important to use test specimens correctly scaled according to the relative maximum aggregate sizes in order to obtain directly comparable data for the prototype and model concretes.

The institute undertook a major structural model study of the lower portion of a new 30-story reinforced concrete building which is being erected in Pretoria. The unusual construction at ground-floor level posed considerable design and detailing problems and the model investigation is intended to verify the structural behavior under both working load and ultimate load conditions.

An investigation on the steam curing of pretensioned concrete was completed. It was found that for a wide range of conditions steam-cured pretensioned concrete units are not inferior to those cured at normal temperature.

INTERNATIONAL ACTIVITIES

The NBRI has continued to participate actively in the affairs of the various international and overseas organizations of which it is a member.

The director of the institute attended a meeting of the Executive Committee of the International Council for Building Research, Studies, and Documentation (CIB) as well as the Fourth Australian Building Research Congress and the 42d Congress of the Australian and New Zealand Association for the Advance-

ment of Science. He also visited building research organizations in Japan, France, and Britain.

The institute's development of a prefabricated brick panel excited considerable interest when a member of the staff reported on this work at the Second International Brick Masonry Conference held at Keele University, Stoke-on-Trent, England.

A senior member of staff visited the "Bouwcentrum" in the Argentine to discuss the possibility of closer liaison and collaboration on climatological studies. The member also participated in a symposium, "Computer analysis for environmental engineering related to buildings," held in Washington. Another member contributed to the session on "Coordination of software" at the CIB symposium, "Some problems of information flow in the building industry," held at Rotterdam in September.

The institute has continued to assist adjoining and other African territories. Arrangements were made for closer cooperation with Rhodesia. A Portuguese team concerned with town planning and housing in Lourenço Marques visited the NBRI during October for detailed discussions on the institute's work, particularly that on low-cost housing.

The overseas demand for publications and the steady stream of visitors from other countries is evidence of the international recognition accorded the institute.

TIMBER RESEARCH UNIT

The timber research unit (TRU) offers a wide variety of specialized research and technical services to both producers and consumers of forest products. The main purpose of the unit is to further timber technology, through research and development, for the benefit of the local forest products industry. More specifically the aims of the unit are:

- To promote effective utilization of South African timber resources;
- To assist in developing satisfactory products;
- To assist in developing and improving manufacturing processes; and
- To promote effective use of timber products.

The work of the TRU therefore covers various fields and includes research into timber engineering, wood processing, fiber and chemical research, and technoeconomic studies. The unit's information and special services division disseminates the results of this work by means of publications, symposia, lectures, representation at conferences and on technical committees, and through direct contact with the industry.

SYSTEMS DEVELOPMENT

The TRU formed a systems development division early in the year under review in an endeavor to develop forest products and promote their utilization in order to achieve maximum economic efficiency. The new division will also insure the sensible application of research results and advanced technological know-how in industry.

Systems development coordinates the work and aims of the scientist, economist, producer, and manager. It is a formal, systematic and analytical method of improving the efficiency of a whole system and includes evaluation of existing systems and the selection of those most likely to benefit by improvement; the development, in close cooperation with industry, of the new improved system; its implementation; and assessment of the actual benefits attained and a critical investigation of discrepancies.

The first long-term project is the development of an efficient grading system, incorporating mechanical stress-grading.

TIMBER SEASONING

The importance of proper seasoning and the need to improve current kiln-drying practice was brought to the fore by the recent introduction of compulsory grading of softwood structural timber processed and sold in the Republic.

Preliminary work on the pattern of stress development during the drying of timber has been done. Knowledge of the nature and magnitude of drying stresses is important not only for understanding the fundamental physical properties of wood, but also for the development of kiln schedules, the control of shrinkage, and the relief of residual stresses and sets.

The cost and technical aspects of different drying procedures, that is, air drying, solar drying, predrying, kiln drying, and combinations of these methods, have been investigated.

Work is in progress to develop techniques for rapidly determining the moisture content of green boards, kiln samples, and seasoned timber. Research is being done on how to eliminate or reduce seasoning degrade, especially that caused by twist.

This research aims to provide information which will enable the timber industry to season timber to SABS standards at the lowest cost. Much of the information already obtained has been incorporated in a code of practice on timber seasoning which the South African Bureau of Standards is preparing.

BOARD PRODUCTS

The relative durability of different types of wood-base board products exposed to the weather is being investigated. The panels were inspected after 2½ years of outdoor exposure. Their behavior was similar to that of panels subjected to accelerated aging tests. The edges of these panels are the most vulnerable to weathering and methods of protecting the edges were therefore evaluated.

ADHESIVES

The effect of resin on the gluability of pine timber is being studied. An experiment was initiated to determine the mechanism by which various contaminants interfere with wood gluing. An experiment to determine the durability under service conditions of products glued with urea-based adhesives showed that no deterioration took place within a year. A short-term investigation to find a replacement for resorcinol adhesives used in manufacturing finger-joined timber and glulam resulted in the recommendation of a melamine/urea mixture of which the melamine resin constitutes not less than 60 percent.

STRESS-GRADING

Progress in the development of the mechanical stress-grading method by which structural timber is classified according to strength much more reliably and efficiently than by current visual grading, is such that a full set of data for the application of mechanical stress-grading in the Transvaal, the major timber producing area in the Republic, will be available early in 1971.

TIMBER JOINTS

Design data for economical nailed plywood joints for roof trusses have been derived and confirmed by tests. Pilot studies of glued plywood joints and nailed metal plate joints have been made as a basis for further work in this direction.

ROOF TRUSSES

Prototype roof trusses using the nailed plywood joints developed by the unit have been designed and tested with very satisfactory results. A set of standard designs is being produced and should be available by mid 1971.

The basis for a South African standard specification for roof trusses, including provision for prototype testing and handling tests, is being developed.

PULP AND PAPER RESEARCH

A technoeconomic survey of the pulp, paper and board industry was conducted to provide a basis for the selection of research projects with the maximum economic value for local industry. The conclusion was that this branch of industry is largely self-sufficient as far as research is concerned and that the TRU could best assist by doing long-term research especially on raw materials.

PRESERVATION OF PAPER

After an initial study of the factors that could influence the deterioration of paper during aging, the investigation was extended to determine the simultaneous influence of temperature, relative humidity, aging period and acid content.

REQUIREMENTS OF PULPWOOD

Wood samples with different fiber properties are being characterized to determine how these properties influence the quality of pulp and paper. The fiber morphology and other physical and chemical properties of the wood are determined and paper sheets made from the wood are tested.

TECHNO-ECONOMIC STUDIES

The project to determine and improve the efficiency of seasoning timber continued. The mathematical model for seasoning efficiency was refined and has already been applied at a sawmill. The sensitivity of the model is being tested in the laboratories of the TRU.

A study of the cost of manufacturing undesigned laminated pine members (stock glulam) was completed. This study was undertaken to provide the TRU with information which could be used as a basis for planning research on this important product. An important conclusion was that although the locally manufactured product can compete with imported solid timber on a cost basis, the profit margin is low and research should aim at the reduction of production costs.

A technoeconomic survey of the forest products industry comprising the pulp, paper and paperboard industry on the one hand and the sawn timber industry on the other, was undertaken in conjunction with the Technoeconomics Division of the Information and Research Services of the CSIR.

A detailed study of the cost of producing sawn timber was also initiated as this information is required for various research programs at the TRU.

SOUTH AFRICAN WOOL TEXTILE RESEARCH INSTITUTE

Although the South African Wool Textile Research Institute (SAWTRI) is one of a number of national institutes constituting the CSIR, it is unique as far as the financing of its activities is concerned. A number of organizations (the South African Wool Board, the Mohair Board and the national trade associations of wool washers and carbonizers, wool combers and worsted manufacturers) make funds available on the basis of contributions guaranteed for 5 years. The CSIR makes an annual grant to meet expenditure, the amount being more or less equal to that provided by the organizations referred to above.

The past year the Research and Development Committee of the International Wool Secretariat for the first time since its establishment met in South Africa at the Institute's laboratories in Port Elizabeth. The Institute organized an international dyeing and finishing symposium to coincide with this. It was attended by 90 delegates and papers were read by leading wool research scientists from the United States, Britain, Switzerland and Australia as well as by the Institute's senior research workers.

TEXTILE TRAINING

SAWTRI is the only CSIR Institute which controls a university department. The director, as professor extraordinary of textile science, and senior research personnel who are all part-time lecturers, are responsible for training textile technologists at the University of Port Elizabeth. At the end of 1970 the first group of students completed the 4-year B. Sc. (textiles) course and graduated as the first fully South African trained textile technologists.

MACHINE WASHABLE WOOL

Because of wool's natural tendency towards felting shrinkage, the Institute is constantly engaged in developing methods to render wool shrinkproof and make wool end commodities completely machine washable. This can be done by prechlorinating wool hand-knitting yarn with 2 percent active chlorine in the Melafix DM (Ciba) process, and then dechlorinating it with sodium bisulphite and finally treating the hanks with Hercosett resin at pH increasing from 5 to 8.

A further development was a continuous process to make wool top shrinkproof with Hercosett 57. This is a modification of current methods of applying the Hercosett resin. A continuous combed sliver is prechlorinated on a pad and then treated with resin in a backwashing machine.

DYEING WOOL IN ORGANIC SOLVENTS

The use of organic solvents instead of large quantities of water is an important advance in the dyeing of wool. The new method dispenses with effluent purification and uses about 5 per cent of former water requirements.

A dyestuff is dissolved in a small quantity of water and this solution is added to an organic solvent containing a suitable dispersing agent. The wool absorbs the dyestuff and water almost completely, leaving little or no water in the solvent which can easily be recovered for reuse. The operation can be carried out in a conventional stainless steel drycleaning machine provided with heating facilities.

DYEING KARAKUL WOOL

Considerable attention has been given to the processing karakul wool during recent years. Because the natural pigmentation of the fiber is not suitable for the application of bright colors the uses of karakul wool have been limited. Although an effective bleaching process has been worked out in collaboration with the South African Wool Board, this treatment adds to the cost of the final product. Further research into the application of reactive dyes to the yellowish-brown unbleached karakul wool has resulted in the achievement of bright shades without bleaching. Should greater brightness be required the karakul wool can be blended with 10 to 20 percent of a coarse and relatively cheap type of mohair or wool.

WRINKLING OF WORSTED FABRICS

On investigating the effect of fabric constructional variables on the behaviour of woven fabrics it was found that fabrics made from coarser yarns are more wrinkle resistant than fabrics made from finer yarns. It was also found that in woven cloth there is a tendency towards lower wrinkle resistance with increasing sett (the number of threads per centimeter). The wrinkle resistance of a fabric can be increased considerably if the folding twist of the yarn is of an appropriate value.

Wrinkle resistance of fabrics woven under high loom tension can be increased by decatizing the fabric for a longer period. Increasing the severity of the setting conditions in high-temperature decatizing also improves wrinkle resistance.

TESTING INSTRUMENTS

An instrument called the withdrawal force meter, has been developed by means of which the withdrawal force of a wool sliver can be measured in the laboratory of a processing factory in order to ascertain without delay whether the sliver has been gilled satisfactorily.

Normally the expected carding and combing performance of a consignment of scoured wool can only be determined by actually carding and combing a sample of 15 kilograms to 25 kilograms, which is time-consuming and expensive. Using the entanglement meter built by the institute, the expected carding and combing performance can be obtained within a few minutes using only 500 grams of scoured wool.

PROCESSING SOUTH AFRICAN WOOL TYPES

The carding and combing performance of 64's wools of different mean fiber lengths (mf) has been investigated. Spinners' style wools from a certain district in the southern Free State were used. It was found that fiber breakage during processing increases rapidly with an increase in the mean fiber lengths of the raw wool. However, the mean fiber lengths of the combed top increased, and the percentage noil decreased when raw wool with longer fibers was used.

NOBLE COMB FOR SHORT WOOL

It is generally accepted that the Noble comb is suitable for long wool only. This may be because, with the comb functioning with standard size drawing-off rollers at normal distances from the circle, the throwover is such that uneconomical amounts of noil are produced from short wools. This makes the rectilinear comb preferable for short wool. However, the versatility of the Noble comb has been increased by special modifications and new techniques and it is now possible to comb 6 months' wool of a mean fiber length of 3.2 centimeters successfully.

FIBER BREAKAGE IN CARDING

It was found that the performance of a rectilinear comb improves when processing wool with a regain increased to about 25 percent. The carding of scoured wool at regains higher than 25 percent causes an increase in noil. Carding under relatively dry conditions, with the application of an antistatic additive before carding, is beneficial provided water is added directly during subsequent gilling to obtain the optimum regain conditions for combing. A scoured wool regain of 15 to 20 percent, or even lower, is recommended provided there is not excessive fly during carding. The relative humidity of the wool is unimportant if an efficient antistatic lubricant is used. A marked improvement was noticed in wool gilled and combed immediately after carding compared with wool which had been stored after carding.

HAND AND MACHINE KNITTING YARNS FROM MOHAIR

Yarns were successfully spun from BH, CH, DH, and BR quality coarse mohair on a double-apron ring frame, after drawing on three gill drawings and a high drafter. Some BH was also prepared on the conventional Bradford set. Yarns of R110 tex were successfully spun in all cases while yarns of R75 tex were spun from BH, CH, and BR. The finest yarns that could be spun from the short type DH at 5,000 r.p.m. was R88 tex. The hairiness of all the yarns was acceptable. Several other types of mohair (kid, young goat, and BSFH mohair) were blended with various percentages of wool for knitting trials. In all cases spinning performance was satisfactory.

DIMENSIONAL PROPERTIES OF KNITTED WOOL FABRICS

If all-wool, shrinkproofed knitted fabrics are to be machine washable, it is essential that the structures be stabilized against dimensional changes caused by relaxation shrinkage. During relaxation, the dimensions of knitted structures change considerably. Area shrinkages of 30 percent have been found in some double-jersey structures. As the ultimate dimensions of the finished fabrics are known only approximately, relaxation shrinkage is a major problem for the commercial knitter. The rationalization of the knitting operation and methods of obtaining the fully relaxed state have made it possible to predict the fully relaxed dimensions of many weft-knitted structures with reasonable accuracy, prior to actual knitting.

YARN PROPERTIES, MACHINE VARIABLES AND KNITTING PERFORMANCE

An investigation of the knitting performance (ease with which a structure can be knitted on a given machine) of different double-knit structures has led to the determination of optimum values for yarn intake and run-in-ratio for a number of structures.

In another investigation it was found that a count range of R19 tex to R32 tex can be knitted efficiently on an 18 gauge double-knit machine. The important implication of this work is that wool yarns of relatively low tensile strength can be knitted successfully, provided the machine is set to optimum knitting conditions and has a positive yarn feeding device. However, the use of counts of yarn that are too fine for a particular gauge of machine spoils the aesthetic appearance and physical properties of the knitted fabric.

WEFT SKEWING

One of the most perplexing problems confronting the worsted trade is the skewing of certain types of fabrics which distorts the pattern and creates difficulties when the fabrics are cut for making clothes.

For most of the parameters investigated (weave construction, fabric width, variation in sett, warp tension, twist, weft tension and the type of temple), the two classical weaves, 2/2 twill and 4/4 twill, gave opposite reactions. Thus it would seem that each weave has its own skewing characteristics.

WOOL-RICH BUNTING

The use of nylon in an intimate blend with wool improves the flying performance of bunting. A blend of 70-percent wool and 30-percent nylon gives satisfactory performance in areas where prevailing winds are strong.

CO-WE-NIT

Although it started as a limited project the institute's research on the Co-we-nit (a combination of weaving and knitting) has expanded considerably. The versatility of the Co-we-nit machine has been increased to such an extent that the institute now has a practically unique collection of curtaining and furnishing fabrics. An important aspect of this development is the use of undyed and dyed karakul and mohair fibre to which the Co-we-nit technique is admirably suited. Hitherto the demand for karakul wool has been limited because of its restricted end uses. Now however, with the possibilities created by the institute's research, karakul should enter a new era.

INFORMATION AND RESEARCH SERVICES

The Information and Research Services (IRS) are concerned mainly with the following functions of the CSIR:

Collection, storage, retrieval and dissemination of published scientific and technical information.

Recording, publishing and making known the results of research undertaken or supported by the CSIR.

Encouragement and support of research and development in manufacturing industry.

Support of academic research in the basic natural and engineering sciences.

International scientific liaison.

COLLECTION AND DISSEMINATION OF INFORMATION

The central library provides services to all branches of the CSIR as well as to other organizations, industrial firms and individuals throughout the country. The following selected statistics indicate the scale of this operation:

Year	Publications issued and photocopies provided	Books and pamphlets ordered	Periodicals (subscriptions and exchanges)
1966.....	43,598	3,424	2,907
1967.....	44,995	3,704	3,136
1968.....	52,450	4,440	3,413
1969.....	53,845	5,605	3,457
1970.....	52,755	4,958	3,410

Production of the first edition of the union list of serial titles in South African libraries, under the title Periodicals in South African Libraries (PISAL) which is undertaken in collaboration with the University of South Africa (and financed jointly by the CSIR and the Human Sciences Research Council) proceeded as far as the issue of titles listed under the letter "S." At this stage it was decided to stop work on the first edition and proceed directly to the production of a complete second edition, using computerized procedures. These were adapted from procedures developed by the National Science Library of the Canadian National Research Council, whose help and cooperation is gratefully acknowledged.

In addition to this important bibliographic tool, a number of other directories and guides to sources of scientific and technical information in South Africa are compiled and published. A number of these directories and indexes are computer-produced, and during the year funds were provided for the development of information services based on magnetic tapes available from the major indexing and abstracting services overseas.

Good progress has been made in the application of computerized procedures to the recording of serial titles taken by the central library. On behalf of the State Library, Pretoria, the possibility of producing the South African National Bibliography in this country, using computerized listing and photocomposing techniques adapted from those developed for this purpose in West Germany, is being investigated. Research groups in the CSIR research institutes are also assisted with the development of coordinate indexing systems for storage and retrieval of information.

On behalf of the National Library Advisory Council a comprehensive survey is being made of developments (present and planned) in the application of computers to library and information services in South Africa, including the use of microform and telecommunications links between libraries and information centers. Special attention is being directed to future needs in relation to international developments in this field. In another survey for the National Library Advisory Council, which is being undertaken in collaboration with the Human Sciences Research Council, the adequacy of literature resources available to research workers in South Africa is being investigated.

The CSIR, as the national member of the International Federation of Documentation (FID) was represented at the General Assembly and 35th International Congress of the FID in Buenos Aires in September 1970, by the Council's Director of Information and Research Services.

Liaison between the CSIR and small- and medium-sized manufacturing firms is provided by a technical information service (TIS) which handles technical inquiries as a routine activity, visits individual firms and assists with the organization of industrial symposia and of visits by industrialists to the CSIR. The TIS also produces a monthly bulletin TI—technical information for industry, as well as brief guides and technical pocket books for use by industrial technicians. During the year the TIS joined the Production Engineering Research Association in the United Kingdom as part of an effort to provide better information and advisory services to industry in the field of production technology. A technical information officer was stationed at Bellville to provide closer liaison between the CSIR and manufacturing industry in the Western Cape. An extensive survey is at present being undertaken of the present state and potential development of automation in the Republic. This project, which is expected to extend over 2 more years, is being undertaken on behalf of the scientific adviser to the Prime Minister and the South African Council for Automation and Computation.

PUBLISHING AND PUBLICIZING THE RESULTS OF RESEARCH

Work on a guide for CSIR authors and editors aimed at establishing and maintaining adequate standards of presentation and documentation for CSIR research publications, is progressing steadily. The chapters which have been issued so far cover publishing policy, identification of publications, format and order of contents, preliminary matter, body of the text, reference and supplementary matter, scientific illustration, copy preparation and proof correction, typing of reports (including typing for direct reproduction), and the publication of conference proceedings. Further chapters dealing with language usage and with respective functions of referencing and editing are in preparation. In its present form the manual is intended for domestic use only, but it is the intention to publish an abridged version for wider distribution once all the proposed chapters have been completed.

Steady progress is being made with the compilation of the technical dictionary for the textile industry. The urgent need for an adequate, standardized Afrikaans textile terminology has led the CSIR to initiate this project in collaboration with the South African Bureau of Standards, the Naktuaburo of the Suid-Afrikaanse Akademie vir Wetenskap en Kuns, the Industrial Development Corp., the University of Port Elizabeth and the Departments of National Education and Agricultural Technical Services.

An Index to CSIR Publications 1945-68 was produced during the year. This lists all publications by CSIR staff and recipients of CSIR grants. Future cumulations will be facilitated by the use of the same computer program for production of the six monthly lists of CSIR publications under the title CSIR Research Review.

The Permanent National Advisory Committee on Research Publications of the Scientific Advisory Council was assisted in reviewing the problems of pri-

mary research publications in South Africa. Publishing services were also provided for the South African Journal of Antarctic Research, the first issue of which is to appear under the auspices of the South African Scientific Committee for Antarctic Research in 1971.

The main media which have been developed for informing the public of the results and implications of CSIR research are the semipopular monthly journal *Scientiae*, the four month bulletin *CSIR Research Briefs*, the *CSIR Annual Report*, press releases (of which 80 were issued during the year to all newspapers, news agencies, magazines and the radio), and documentary films and film featurettes on particular events—for showing on the commercial cinema circuits. The CSIR's own staff, many of whom are stationed in other parts of the country, are catered for by a weekly staff newspaper, *Sciendaba*.

To promote communication at the personal level, symposia on topics of interest to industry are arranged from time to time. The following industrial symposia were held during the year:

- Utilization of structural timber.
- Spectroscopy in industry.
- Earthling practices.
- Food technology.
- Tungsten carbide and steel grinding with diamond abrasives.

The average attendance at these meetings was between 100 and 150, and in each case the program included visits to the CSIR laboratories concerned. In addition, about 3,000 visitors were taken on guided tours through the various laboratories and institutes at *Scientia*, Pretoria. These included organized tours of scholars and students, members of professional societies, representatives of organized industry, and foreign visitors.

Arrangements were made for special functions, including a visit by the State President on the occasion of the CSIR's 25th anniversary, the opening of the Stander Water Reclamation Plant at *Daspoort*, Pretoria, and a visit by the principals of South African universities.

INDUSTRIAL RESEARCH AND DEVELOPMENT

In addition to the research undertaken by the CSIR's research laboratories, institutes and units on behalf of or in collaboration with industry, the CSIR has a specific brief to encourage and support research undertaken by industry itself. The CSIR is advised on these matters, including the distribution of funds for the support of co-operative industrial research by its Advisory Committee on the Development of Research for Industry. During the year, recommendations for the support and development of research during the ensuing 5-year period were considered (on the basis of technoeconomic surveys and reviews by sub-committees appointed by this Advisory Committee) for the Leather Industries Research Institute, the Fishing Industry Research Institute, the Timber Research Unit, the Bantu Beer Unit—and the industries served by them.

The committee gave particular attention to incentive schemes introduced in other countries for promoting the technological innovation potential of manufacturing industry, and discussed the possibility of introducing similar schemes, adapted to South African requirements, with the Government and the Federated Chamber of Industries.

Studies of the optimum allocation of research support for the various economic sectors and disciplines in science and engineering have continued. Background information for this purpose is provided by national surveys of expenditure on research and development carried out on behalf of the Committee on Research Expenditure of the Scientific Advisory Council and partially financed by the Department of Planning Reports dealing with expenditure during the financial year 1966-67 by the government sector, universities and university colleges, the private sector and also by the Republic as a whole, were approved by the Scientific Advisory Council. Similar reports on research expenditure for the financial year 1968-69 are in preparation and collection of information on expenditure on research and development during the financial year 1969-70 was initiated.

Complementary technoeconomic surveys of individual sectors of industry are undertaken as an aid to the planning of support for research and development in the sectors concerned. In addition to surveys of the leather, fishing, timber and Bantu beer industries (referred to previously) work has continued on the technoeconomic surveys of the chemical industry. Various categories of products

are being studied in detail, and a report on the phosphate group was published at the end of the year.

More detailed studies of the economic aspects of specific projects were undertaken on behalf of CSIR research groups. To this end research is undertaken into the application of industrial economics in the context of technological research—including technological forecasting. This is considered to be of particular relevance, as research planning requires that current research should be relevant to the technologies which will be required in the future.

UNIVERSITY RESEARCH GRANTS

Considerable improvement of the university research grant scheme was possible during the year under review following successful representation by the Council for an increase in the annual parliamentary provision for this purpose. The valuable assistance given in this regard by the Scientific Adviser to the Prime Minister and by the Department of Planning is gratefully acknowledged.

The major portion of the additional grant funds provided by the government was used to increase the value of bursaries awarded for research and post-graduate study at South African universities, with effect from January 1, 1970. It is believed that this will help to stop the downward trend in the number of post-graduate students enrolled at South African universities and that more post-graduate students who would otherwise have gone overseas for pre-doctoral studies, will now continue their studies at South African universities. The improvement of research facilities at South African universities is considered to be of such importance that a considerable portion of the parliamentary grant (and the additional amount provided) was used for this purpose during 1970.

Because of rising costs, particularly in the case of specialized equipment, it was not possible to provide for all the needs of universities in this regard but indications are that it is now necessary only in exceptional cases for students to go overseas for pre-doctoral study. This does not detract from the value attached to research and study at approved overseas institutions, and the Council's grant scheme therefore provides for support in the case of teaching staff and students for post-doctoral work overseas and for participation in international scientific conferences.

INTERNATIONAL SCIENTIFIC LIAISON

The main CSIR agencies for scientific liaison at the international level are the South African Scientific Liaison Offices in London, Washington, Paris and Cologne, and the Science Co-operation Division in Pretoria provides services in connection with CSIR's national membership of the International Council of Scientific Unions (ICSU) and its affiliated unions—which are nongovernmental international scientific organizations. These liaison services are provided for the benefit of the entire South African scientific community.

Activities during the year were concerned mainly with management of national programs linked with global programs under the auspices of ICSU's Scientific Committee for Antarctic Research, Scientific Committee for Oceanographic Research, and the Scientific Committee for the International Biological Program. In addition, the CSIR organized the second international symposium on Gondwana stratigraphy and palaeontology, under the auspices of the International Union of Geological Sciences. It was attended by 180 scientists of whom approximately one half were from other countries. The year also saw the publication of papers presented at a symposium on South African contributions to the Upper Mantle Project—a global program of the International Union of Geological Sciences—as a special publication of the Geological Society of Southern Africa.¹

The CSIR also organized three other symposia in which foreign experts played a notable part, viz. the International Symposium on Mycotoxins in Human Health, the National Symposium on the Production and Use of Laboratory Animals (both in collaboration with the Medical Research Council) and the National Oceanography Symposium (sponsored by the South African National Committee for Oceanographic Research).

¹ Geological Society of South Africa, *The Upper Mantle Project*, Special Publication No. 2, Pretoria, July, 1969.

LEATHER INDUSTRIES RESEARCH INSTITUTE

The Leather Industries Research Institute (LIRI) had its origin in research grants made in 1936 by the hides and skins and the tanning industries, which were followed in 1941 by the establishment of a research institute to serve the needs of the hides and skins industry, the wattle industry, the tanning industry and the footwear industry, as well as of the suppliers and bulk consumers of the products of these industries.

Since its inception, the LIRI has endeavored to maintain a balanced research program, making regular contributions to overseas scientific journals and applying the results of this basic research to the practical problems of local industries. Through its overseas publications, the LIRI has become the recognized world leader in several branches of fundamental chemistry, and has earned an international reputation. As a result of this, local industries have been able to benefit from applied scientific work carried out by overseas leather research organizations, even when such work is of a confidential nature.

The Leather Industries Research Institute has entered its sixth 5-year grant cycle, and during the year discussions have taken place between the Board of Control and the CSIR Advisory Committee for the Development of Research for Industry.

During a recent visit by the Director to similar organizations in Australia, New Zealand, Japan, the United States of America, Britain and Europe, it was apparent that many of the ideas and processes germinated at the LIRI were being utilized overseas.

The world's leather industries are fighting a battle for survival against the synthetic substitute and survival will depend on the fullest possible use of modern science and technology. In this context, the institute has a vital part to play in the growth and development of the important basic industries it serves.

Because of changes in tanning and footwear technology, new approaches to training at all levels are evolving. The trend is toward the type of training pioneered by the institute 6 years ago with correspondence courses backed by in-factory tuition and short block-release courses at the institute. A record enrollment of 261 students from 19 countries is indicative of the important role played by these courses.

HIDES AND SKINS

In view of the irreversible and costly damage done by bacteria to hides and skins during curing and tanning, extensive studies have been made in the past year of the microbiology of curing and tanning processes. This investigation has been done with the cooperation of the department of botany and microbiology, Rhodes University, and the hide and leather industries. The study involved determining the aerobic and anaerobic halophobic and halophilic bacterial contamination of wet-salted hides from South Africa, Rhodesia, Australia, England, and New Zealand to compare quality, curing methods, etc.

The part of the hide which is converted into leather is the fibrous protein collagen. Bacteria with collagenolytic activity are therefore the most destructive as regards leather production. Methods have been developed for identifying these bacteria and their gelatinolytic and collagenolytic activity. The tannery liquors used to process hides have also been analyzed for bacterial contamination. Several technical reports and publications have resulted from this work.

PROTEIN RESEARCH

The studies on collagen continued, with the emphasis on the role of hydrogen bonds in protein stability and denaturation. Using polar organic molecules as perturbants, it has been possible to account for collagen denaturation by a predominantly polar mechanism involving hydrogen bonding of the perturbants to the collagen molecule. Hydrophobic bonding does not appear to play a significant role. The results of this work have been published in several papers in an overseas journal.

ALTERNATIVE USES FOR WATTLE

The use of synthetic substitutes for sole and insole leathers has led to declining world markets for South African wattle. The wattle industry has increased its contribution to the institute's research work on alternative outlets for wattle bark and extract. The main effort is being devoted to the production of

chipboard, plywood, and cold-setting finger-jointing adhesives based on wattle extract. Considerable progress has been made in collaboration with local large-scale chipboard and plywood manufacturers. A patent has been applied for for one of the major breakthroughs.

Other uses being explored are soil conditioners for trace-element deficiency and mud thinners for oil-well drilling. Large-scale trials are in progress in all these fields.

LIRITAN

The world's largest sole leather tannery has used the institute's rapid high-quality closed system of sole leather tannage with great success. Sole leather tanneries in the United States of America, threatened with closure because of effluent problems, are interested in installing the LIRI system. Arrangements are being made to give technical advice and assistance to those who wish to convert to the South African method.

FUNDAMENTAL RESEARCH ON TANNING

Research into the mechanism of the process of vegetable retannage of chrome leather was recently completed and the results of the work have been published. Through better understanding of the process it has been possible to improve the strength and durability of this type of leather.

PROPERTIES OF LEATHER

Competition from synthetic upper materials has made it imperative that leather offers the same level of performance as manmade materials, while maintaining the attributes which keep leather the preferred material for comfort.

In order to assess consumer preference, a statistically planned wear trial is being conducted and the observations and measurements will be related to laboratory evaluations. Dynamic methods for measuring water vapor absorption and permeability of upper materials, as well as perspiration resistance, have been developed.

METRIC SIZES AND FITTINGS

The institute has cooperated with the South African Bureau of Standards on all aspects of metrication in the footwear and leather industries, and particularly in the first stages of last measurement and re-marking for the proposed introduction in 1972 of the Mondopoint shoe sizing system, which is likely to be adopted as an international system by the International Standards Organization. The implementation of metrication and Mondopoint is being coordinated by a South African Footwear Manufacturers Federation Special Committee, on which the institute is represented.

PVC AND ADHESIVES FOR FOOTWEAR MANUFACTURE

With the development of special polyurethane adhesives, cross-linked by addition of isocyanate hardeners, PVC and polyurethane-coated upper materials, stuck-on molded PVC unit soles and direct injection-molded PVC shoe bottoms have been used increasingly in shoe manufacture in South Africa. These materials and processes present special problems of adhesion and molding and the institute has assisted in the evaluation of polyurethane adhesives and PVC molding compounds. Special attention has been paid to increasing the heat resistance of adhesives to improve their performance under South African conditions.

POLYURETHANE-COATED LEATHERS AND SYNTHETIC UPPER MATERIALS

The manufacture of current "wet look" fashion leathers involves coating leather substrates with special high-gloss, flexible polyurethane finishes, very often applied over other synthetic resin base and pigmented color coats. These processes pose problems of intercoating adhesion, which affects the flex resistance of the finished leather. The institute has developed special laboratory tests for assessing coating adhesion and flex endurance.

Modern "poromeric" upper materials are laminated or through-structures of polyurethane; their modulus, elastic and plastic properties have been compared with those of different types of shoe upper leather. Their response to wetting,

ability to absorb and transmit water vapor, and their degradation by hydrolysis have all been studied at the institute.

FISHING INDUSTRY RESEARCH INSTITUTE

The Fishing Industry Research Institute (FIRI) is affiliated to the University of Cape Town and has its main laboratory on the university campus; a second laboratory is situated at Walvis Bay.

For its annual income FIRI depends on voluntary contributions from the fishing industry. Firms directly engaged in fishing or fish processing in South Africa or South-West Africa may become members of FIRI by guaranteeing annual subscriptions. Firms with an indirect interest in the fishing industry may contribute to the income of FIRI as associate members. All subscriptions guaranteed for 5 years are matched on a rand for rand basis by the CSIR, and this money is used exclusively to finance FIRI research projects.

Research carried out at the institute covers a very wide field including canning, chilling, freezing, salting, and smoking of fish; production, storage and transport of fish meal and fish oil; the evaluation of the nutritional qualities of fish products; and the control of air and water pollution.

The institute analyzes finished products and raw materials for producers and buyers, and inspects fresh, frozen, salted, smoked, dried, and canned fish. All South African and South-West African fish meal for export is sold on the basis of FIRI analyses and over 2,000 samples are analyzed annually. This keeps the institute in touch with the industrial problems and the results provide a good basis for the formulation of regulations, specifications, and standards for raw materials and finished products. The institute gives scientific and technical advice on specific problems and conducts tests for individual members at their expense. It also keeps its members informed of the latest relevant scientific and technical advances.

FRESH FISH

Considerable attention has been given to improved methods of storing hake on trawlers as these go further afield for their catch. If fish are stored in ice, chemical treatment such as dipping them for 5 minutes in a 6 to 8 percent solution of sodium tripolyphosphate with about 1 percent ethylene diamine tetraacetic acid (EDTA) at 0° C., and using ice containing 2 percent of the phosphate with 0.1 percent EDTA, virtually doubles the storage life to 20 days. Hake stored in fresh water saturated with carbon dioxide at 0° C. remained fresh for 14 days as compared with 7 days for samples stored in untreated water.

FIRI also collaborates with overseas research organizations to insure that the maximum benefit is derived from the current trend of freezing the catch at sea.

SALTED FISH

Salted fish, mainly hake and snoek, may become infected with halophilic microorganisms which turn the fish pink or grayish-brown and make it inedible. If infection has already occurred, the bacteria and molds can be combated successfully by dipping the fish in salt-sorbic acid solutions. The present trend is to pretreat the fish in this way.

FISH MEAL

Sometimes the loads of fish delivered at factories are too small to warrant starting up the processing plant. The fish is likely to develop off-odors rapidly, particularly in hot weather, but the addition of 0.1 percent sodium metabisulphite preserves it for up to 5 days. Apparently the quality of the meal made from the treated fish is not affected.

The accepted method in the manufacture of fish meal by pressing the cooked fish to remove the oil prior to drying is often found ineffective to reduce the oil content of the final dry product to the required level. The basic principles underlying pressing were examined and other methods of removing the oil tested. De-oiling by centrifugation of the mass of cooked fish was so successful that the necessary equipment has been installed at a factory and large-scale tests are in progress.

The effect of antioxidants on the nutritional value of fish meal has been tested both in vivo and in vitro and the results are being evaluated. Antioxidants keep the residual oil more soluble, the iodine value relatively high, tend to protect lysine availability and make the meal less reactive in terms of oxygen absorption and liability to spontaneous heating. Meal deliberately treated with inadequate amounts of antioxidant did not show signs of reactivation when stored for up to 1 year.

AMINO ACID ANALYSIS

The FIRI is doing research aimed at developing a more rapid and cheaper method of amino acid analysis. It is being endeavored to use one of the existing gas chromatographs at the institute to measure the amounts of certain amino acids in fish meal prepared from different species by different processes and stored under different conditions.

The amino acids as such are not volatile enough to be examined by gas chromatography, but if they are converted to the corresponding N-trifluoroacetyl butyl esters, results are encouraging. Qualitative examinations of fish meal hydrolysates have been successful and suitable conditions for obtaining quantitative results are being sought.

TAINTING OF FLESH

The flesh of chickens and pigs is tainted if their feed contains high percentages of fish meal. A survey of chickens offered by the trade confirmed this. Tests carried out in co-operation with the Stellenbosch-Elsenburg College of Agriculture showed that diets containing more than 12.5 percent of antioxidant-treated or fresh fish meal can taint the flesh. Cured meals (in which the oil has been oxidized to some extent) forming 20 percent of the diet do not impart a fishy taint, but make the meat less tasty. A starter ration containing 20 percent antioxidant-treated meal followed by a ration with 12 percent fish meal did not taint the flesh, but the flavor, instead of being typical of chicken, was rather insipid.

Taint is associated with the long-chain unsaturated fatty acids in the residual oil in the fish meal. The concentration of these fractions can be reduced by adding hydrogenated fish oil or other saturated fat to the presscake and repressing before drying. Feeding tests using such fish meal are underway. More fundamental research is also being done on the chemistry of tainting by fish meal.

EFFLUENT

Disposal of effluents by evaporation is being tested as an alternative to chemical treatment or discharge into the open sea. Results are encouraging. Provided the salt content of the liquid is maintained above 10 percent no off-odors develop. Entomological tests indicated that flies do not breed in the dry residue of evaporated effluent. Evaporation rates in the desert at Walvis Bay are high enough for an inland lake of moderate size to cope with the effluent from all the factories.

SALMONELLA IN FISH MEAL

Fish meal handled in bulk may have to be stored in an inert atmosphere, and to facilitate its transport it is pelletized. The effects of both treatments have been studied with regard to the survival of salmonella. Storage in nitrogen lowered the death rate by about 30 percent as compared with storage in air. However, the heat treatment involved in pelletization immediately reduced the salmonella count in artificially inoculated meal samples by a factor of 10^2 to 10^3 .

BULK HANDLING OF FISH MEAL

FIRI participated in a study of the feasibility of providing bulk handling facilities for the fish meal factories at Walvis Bay. The recommendations of the investigating committee will probably be adopted within the next 2 or 3 years.

ARTIFICIAL BAIT FOR ROCK LOBSTER

In collaboration with the Division of Sea Fisheries combinations of fish materials and inert carriers were tested as attractants for rock lobster. Disappointing preliminary results have led to a more fundamental study being undertaken.

SUGAR MILLING RESEARCH INSTITUTE

The Sugar Milling Research Institute (SMRI) is the central scientific organization for research into the manufacturing problems of the South African sugar industry. It was established in 1949 jointly by the South African Sugar Millers' Association Limited (SASMAL), the CSIR and the University of Natal, on whose campus it is situated in Durban. It is financed by SASMAL and the CSIR. Nine sugar factories in Swaziland, Rhodesia, Malawi and Mozambique are affiliated members of the Institute. The main functions of the SMRI are:

Research: Study of the fundamental aspects of processes such as milling, diffusion, juice clarification, crystallization of sugar and the utilization of by-products; the raising of steam and power and engineering aspects of the design and performance of mills, carriers, evaporators and vacuum pans.

Service: Advisory work, trouble shooting, analysis of sugar—particularly sugar for export—and statistical compilation of manufacturing data for the sugar industry.

Training: A 4-year full-time course in sugar technology, during which period students are employed by the Institute, is offered in conjunction with the Natal College for Advanced Technical Education. The cost of the course is borne by SASMAL.

(The sugarcane growers have their own research station at Mount Edgecombe Natal, where the cultivation of sugarcane is studied.)

DIFFUSION

A laboratory study, initiated in 1969, of the mechanism of extraction, the most efficient method of extraction and the optimum extraction conditions during diffusion was continued. The results clearly indicated that preparation is the most important single variable in determining extraction and that with fine preparation a temperature of 68° C. is adequate, producing the same order of extraction as at 78° C. for 50 minutes retention. Whether or not advantage of the lower temperature could be taken in practice depends on the practical limit of preparation fineness. Unless preparation is extremely fine the amount of sucrose extracted from cane depends on diffusion. It has been concluded that commercial diffusers are controlled by diffusion and that design may be based on this principle.

The influence of retention times, temperatures, pH and cane preparation (degree of fineness) on extraction of reducing sugars, ash and color, was not significant. Polysaccharides were the only impurities significantly affected by increased temperature and fineness but their levels were generally lower than those reported in the literature and were well within the range found locally in mill-mixed juices.

Impurities covered by the normal analysis represent only 90 to 93 percent of the total impurities. The nature of the remaining 7 to 10 percent is not clear, but it is known that organic acids form part of this fraction. The investigation was therefore extended to cover organic acids in diffusion juices, press-water and molasses. It was necessary first to develop analytical methods for determining these components and preliminary experiments indicated that a gas chromatographic technique seemed the most suitable. Preparation of methyl-esters of a number of organic acids was therefore undertaken to provide the necessary standards.

PRODUCTS OF ENZYMIC STARCH HYDROLYSIS

In contrast to the Rabe process, in which starch is mechanically removed from juice, enzymatic starch decomposition results in a number of starch fragments which remain in the process stream. It is therefore important to ascertain the nature of these products. Experiments were carried out using potato starch as substrate and a bacterial α -amylase under conditions which simulate an industrial enzymatic starch process. The reaction was allowed to proceed until 95 percent of the starch present was hydrolysed. The total digest was concentrated and the oligosaccharides up to octatetraose were separated and estimated by means of quantitative paper chromatography. The recovery was between 95 and 100 percent.

According to these experiments it appears that starch hydrolysis by bacterial α -amylases in sugar factories results in a range of oligosaccharides consisting mainly of maltotriose and maltohexaose and a dextrin fraction made up on the average of 60 glucose molecules.

MIXING OF SUGAR AND MOLASSES

The institute was requested by the Sugar Terminal Co. to collaborate in the design of a mixing plant. Initially an extensive survey was conducted of equipment available from overseas suppliers, which may be suitable for mixing sugar and molasses on a large scale. Samples of sugar and molasses were sent overseas for testing on pilot mixing equipment and the finished product was evaluated. Tests were carried out at the University of the Orange Free State and at the CSIR on atomizing equipment for spraying molasses. A screw-type mixer was finally selected.

A basic preliminary design was prepared for the dosing plant and the Institute cooperated with the Terminal consultants in the final selection of control and dosing equipment. Flow characteristics under laminar flow conditions were established for various valves to be used in the Terminal plant.

Two tests were carried out during the loading of two ships to measure the flow rate fluctuation in the sugar during loading. For general export sugar the flow was within plus or minus 5 percent of the mean for 98 percent of a 30,000-ton load. For low pol sugar which was more sticky the flow fluctuations were slightly more serious but still of a low frequency and of a long-term nature. Although this indicated that flow ratio control was hardly warranted the consultants felt that it was necessary as a safeguard against sudden flow changes due to intermittent stoppages.

Tests showed that steam temperatures in excess of 140° C. can be used in scraped surface heaters for heating molasses without significant colour formation. Subsequently it was shown that heating by direct steam injection does not cause a significant increase in color. The small amount of condensate added would cause a very small increase in safety factor, which could if necessary be compensated for by lowering the limit for the solids content of molasses delivered to the Terminal.

An analysis of factors affecting the quality of coated sugar was undertaken and specifications have been drafted for the sugar which will be used in the Terminal plant.

WATER POLLUTION

The studies of water pollution at the Doornkop mill ended in August. Since the start of the investigations the partially-recirculating condenser water cooling system has been replaced by a totally recirculating one with the overflow pumped to irrigation, thus keeping all entrained sugar out of the river. In theory therefore the only remaining sources of pollution are the scum yard drain and windage from the spray terrace, which may blow into the river.

Further work was carried out on the stabilization ponds at Umfolozi. The ponds were surveyed and soundings were taken to calculate their volumes. An automatic flow recorder was installed in the main factory effluent and samples taken were analyzed. It was found that although the two dams are fairly effective digesters they are not reducing the oxygen demand of the final effluent enough to make it suitable for discharge into the river under the present legislation. Both dams function anaerobically and the second dam appears to be overloaded. Present reduction of the chemical oxygen demand of the incoming effluent is nearly 90 percent. To make the final effluent fit for discharge into the river, there are two alternatives, viz. to redesign the entire dam system, or to install surface aerators to increase the capacity of the present dams. The latter possibility is being investigated and details of available aerators are being collected.

Toward the end of the year work began on the final version of the *Code of practice for the control of water pollution by sugar mills*. A number of mills were visited and information was gathered on disposal practices, cleaning methods and water usage. A literature survey was done on practices in other countries. This work is being undertaken in cooperation with the National Institute for Water Research.

SOUTH AFRICAN PAINT RESEARCH INSTITUTE

Members of the South African Paint Research Institute (SAPRI) include manufacturers of paint, manufacturers of raw materials for industry and prominent consumers. Much of the work in this Institute is devoted to solving problems encountered by such organizations. In addition, it has a responsibility to the national economy in that its duties involve research in the vital field of protection by surface coatings in the very arduous conditions prevailing in this country. The research work of the Institute is guided by a Research Advisory Panel, consisting of CSIR appointees and of members elected by the annual general meeting.

At the last meeting of the Advisory Panel the program of work was altered almost completely so that only interim results can be reported. Three main problems were investigated.

CONTROL OF HYDROXYL VALUE OF RESINS

The present method of measuring hydroxyl values takes at least 2 hours and is therefore useless as a control during resin manufacture. The Institute was asked to devise a method which would yield an answer in 20 minutes or less.

A number of properties of results have been measured, and the best method appears to be measure absorption in the infrared.

RELEASE OF SOLVENTS FROM PAINT FILMS

Most paints contain a blend of solvents which are lost from the drying film, but not necessarily in order of volatility or boiling point. The final properties of the film, which are, of course, of interest to the user, are determined by that solvent which evaporates last. The film formation itself can be greatly modified by the ratio of solvents present, which may vary throughout the drying process.

Methods have been devised to follow the composition and concentration of the solvent components during drying.

ADHESION OF PAINT TO SUBSTRATE

A statistical evaluation of the "pull off" method has been carried out on epoxy tar coatings on steel, leading to the general conclusion that the film is not pulled off the substrate but parts in itself, resulting in cohesive and not adhesive failure. That part of the film still adhering to the substrate may be so thin as to be invisible on ordinary examination. It may be impossible to measure adhesion as such. Instead, what is measured is the rupture of a layer in the body of the film which has been weakened by contamination.

ANALYSIS OF MATERIALS

There is a constant demand from SAPRI members for the analysis of coatings or their constituent materials. In many cases of complaint or dispute the problem can be solved only by analysis, and the institute therefore constantly investigates new or improved methods. Current topics of particular interest are the quantitative determination of amino resins in the presence of alkyds and the determination of the mole ratios of dibasic acids in polyesters. An ultraviolet spectrophotometer has been purchased and should be very useful in the latter field.

MARINE FINISHES

Exposure tests on a raft in Durban Bay continued. A new material, evaluated as a potential anti-fouling pigment, proved to be of no value for this purpose.

TECHNICAL SERVICES DEPARTMENT

The technical services department (TSD) undertakes the design and manufacture of research equipment and renders essential services, such as graphic arts, transport and stores, to the National Laboratories and Institutes of the CSIR.

The department also undertakes work on contract for other bodies and industry if it cannot be undertaken anywhere else in the Republic.

EXTENSION OF FACILITIES AND SERVICES

The graphic arts division's facilities for the manufacture of printed circuits were extended to meet consumer demand. The new extension provides amongst other things, for the manufacture of multilayer boards used in equipment which must be as small and as light as possible. A high-accuracy process camera has been installed and provision has been made for specialized plating techniques. The facilities are suitable for small runs of printed circuit boards, the quality of which will conform to military specifications.

Preparations for the establishment of a low-cost automation advice center are nearing completion. Production methods simulated on a scale model will be used to advise small and medium-sized local industries with limited capital resources on the automation of mass-production processes. Simulation methods include electro-mechanical, pneumatic, and hydraulic models of production processes. Low-cost automation will play an important role in the development of industries in South Africa with its shortage of skilled manpower. Results of investigations which can be applied by other industries will be published.

TRAINING

The demand for craftsmen and technicians trained at the Training Center for Instrument Makers has increased to such an extent that 50 percent of those qualifying annually are recruited by the CSIR. Scientific instrument makers who after training leave the CSIR, take up employment in a variety of occupations. To meet the increasing demand for trained craftsmen and technicians the training center is being expanded.

PROJECTS

Of the numerous projects in which research institutes and other bodies were assisted by the TSD design and workshop personnel, the following merit special mention:

A pilot plant for the horizontal hydraulic transportation of coal has been erected to establish the difference between the transport characteristics of segmented piping and conventional piping.

A dynamic cone penetrometer, developed by the National Institute for Road Research for the measurement of the California bearing ratio of soil and the flexural behavior of road foundations, was manufactured. A prototype mobile machine which simulates the pressure exerted on roads by moving wheels, was developed in collaboration with the National Institute for Road Research.

The design and manufacture of equipment to mass-produce components for a dynamic axle weight analyzer, designed by the National Institute for Road Research, was undertaken on behalf of a manufacturer.

An apparatus to determine the permanent deformation and fatigue characteristics of bituminous bonded materials under triaxial static and dynamic forces, was designed.

An operating enclosure, ventilated with near-sterile conditioned air, to prevent wound infection during surgery, was manufactured for the H. F. Verwoerd Hospital.

Several pressure transducers used to measure cerebral fluid pressure have been manufactured for neurosurgical research.

An apparatus to determine the influence of milk containing penicillin on the bacteriological action of cheese-manufacturing processes, has been manufactured for the Dairy Control Board.

A high-accuracy barometer for the calibration of altimeters in the range of 0 to 800 mm. Hg has been designed in collaboration with the National Physical Research Laboratory.

A sample holder more easily manipulated than conventional holders has been designed and manufactured for electron microscope studies of single-crystal structures.

A water-cooled ruby laser for spectrochemical studies, which can discharge 25 shots per second, has been designed and manufactured in collaboration with the National Physical Research Laboratory.

An improved tilting chamber for testing pupil pilots has been manufactured for the National Institute for Personnel Research.

An apparatus for measuring the intensity of light sources has been manufactured for the South African Bureau of Standards.

Various items of equipment for testing wool fiber, including a woolteasing scouring machine and a yarn friction tester have been built for the South African Wool Textile Research Institute.

A prototype apparatus for the automatic control of flow of the water to sludge settling tanks, has been designed and installed at a mine.

A model water-thickening apparatus has been manufactured to study the settling of flocculants and their effect on silt deposits.

A working scale model of a sewage purification plant was manufactured for the water year exhibition.

A pilot plant has been built for the extraction of agar from South African seaweed.

Equipment has been manufactured for the study of the flow properties of water pumped through pipes and manifolds of different sizes.

An apparatus to determine the efficiency of stacked air/liquid heat exchangers for chemical processing has been manufactured.

TECHNICAL INFORMATION

The services of the technical information division have, in collaboration with the CSIR's information and research services, been supplemented by regular bulletins of concise information on topics with a specific bearing on the activities of the technical services department.

Balance sheet

as at 31st March 1970

	General Fund	Building Fund	1970	1969
Accumulated fund			R33 104 836-73	R31 349 947
Balance as at 31.3.1969	R19 205 567-11	R12 144 380-14		
Inter-fund transfers	322 000-00 (-)	322 000-00		
	18 883 567-11	12 466 380-14		
Transfer to SAMRC	1 316 512-56			
Sub-total	17 567 054-55	12 466 380-14		
Capital receipts				
Parliamentary grants:				
CSIR	1 388 500-00	450 000-00		
Grants	111 800-00			
Donations:				
CSIR	57 451-00	30 452-44		
Grants	1 569-57			
Interest		167 545-20		
Sale of assets written off:				
CSIR	20 209-03			
Grants	328-24			
Investigations and services	771 134-96			
Sub-total	2 350 992-80	647 997-64		
Add:				
Excess income	520 310-63			
Adjustment previous years:				
CSIR	5 052-20 (-)			
Grants	267-13			
Nett value of physical assets transferred	50 437-28			
	2 916 955-64	647 997-64		
Less:				
Cost of assets written off:				
CSIR	476 211-18			
Grants	17 340-06			
Sub-total	2 423 404-40	647 997-64		
Total	R19 990 458-95	R13 114 377-78	R33 104 836-73**	R31 349 947
Current liabilities				
Advances for investigations and services			1 804 700-22	2 246 998
Sundry creditors and credit balances			1 423 975-03	1 337 331

Total	R3 228 675-25	R3 584 329
Grand total	R36 333 511-98	R34 934 276

Notes: *Value of Assets transferred to S.A. Medical Research Council R1 142 372-56; to S.W.A. Administration R8 740-00 and from Magnetic Observatory R59 177-28.

**Contractual obligations against the General and Building Funds as at 31st March 1970 was R1 234 387 and R364 195 respectively.

C. v. d. M. Brink *Acting President*

J. H. Visagie *Secretary/Treasurer*

Pretoria, 23 September 1970

Statement No. 1

South African Council for Scientific and Industrial Research

	Additions		Written-off	Phys. assets transferred*	1970	1969
	Grants	CSIR				
Fixed assets (at cost)						
Land and buildings		R1 373 613-74			R12 722 090-04	R11 348 476
Laboratory equipment	165 662-63	1 483 866-70	438 886-34	1 032 339-76	14 479 608-53	14 301 305
Furniture and office equipment	192-26	145 447-60	18 722-13	33 500-20	1 014 613-26	921 196
Vehicles and cycles	—	388 101-63	35 682-77	106-15	720 226-37	367 914
Books and journals	172-94	107 680-05	260-00	21 411-34	896 304-98	810 123
Prefabricated structures	—	288-80	—	4 577-83	9 456-43	13 746
Shares in S.A. Inventions Dev. Corp.	—	—	—	—	140 000-00	140 000
Stores stock	—	54 972-99	—	—	381 338-82	326 366
Sub-total	166 027-83	2 180 357-77	493 551-24	1 091 935-28	17 641 548-39	16 880 650
Total	R166 027-83	R3 553 971-51	R493 551-24	R1 091 935-28 (—)	R30 363 638-43	R28 229 126
Current assets						
Wool stock					3 764-95	—
Sundry debtors and debit balances					1 269 310-55	814 731
Investigations and tests in progress					1 220 229-15	970 461
Advances and deposits:						
Research grants				320 416-07		
Other				287 876-07	608 292-14	1 393 795
Investments					2 738 271-35	3 357 727
Cash:						
At S.A. Reserve Bank				103 899-22		
Petty cash imprests				26 106-19	130 005-41	168 436
Total					R5 969 873-55	R6 705 150
Grand total					R36 333 511-98	R34 934 276

The above Balance Sheet has been audited in accordance with the provisions of Section 56 of the Exchequer and Audit Act No. 23 of 1956, as read with Section 14(1) of the Scientific Council Act No. 32 of 1962, and I certify that it is a true and fair view of the accounts of the Council for Scientific and Industrial Research.

H. R. P. A. Kotzenberg, *Controller and Auditor-General*
Pretoria, 12 October 1970

Operating account

for the year ended 31st March 1970

	1969/1970			1968/69
	University Institutions	CSIR	Total	
Expenditure				
Salaries, wages and allowances	R129 884-63	R10 804 003-13	R10 933 887-76	R9 073 700
Consumable stores and services	8 041-93	4 661 687-88	4 669 729-81	5 739 649
Subsistence and transport	9 022-76	550 957-36	559 980-12	555 459
General expenses	33 115-71	1 574 227-14	1 607 342-85	1 752 511
Subsidies:				
Research by industry	—	278 628-63	278 628-63	246 886
Grant	598 313-51	—	598 313-51	956 171
Sub-total	778 378-54	17 869 504-14	18 647 882-68	18 324 376
Less: Income for internal services	3 421-10	2 142 119-18	2 145 540-28	1 955 324
Sub-total	774 957-44	15 727 384-96	16 502 342-40	16 369 052
Balance transferred to Accumulated Fund	13 957-01 (—)	534 267-64	520 310-63	12 743 (—)
Total	R761 000-43	R16 261 652-60	R17 022 653-03	R16 356 309

C. v. d. M. Brink *Acting President*

J. H. Visagie *Secretary/Treasurer*

Pretoria, 23 September 1970

Statement No. 2
South African Council for Scientific and Industrial Research

	1969/1970			1968/69
	University Institutions	CSIR	Total	
Income				
Parliamentary grant	R754 300-00	R8 866 900-00	R9 621 200-00	R8 125 040
Contributions to CSIR projects	—	575 042-59	575 042-59	525 060
Investigations and services	—	6 744 939-04	6 744 939-04	7 659 403
Publications	4 050-43	9 527-23	13 577-66	9 248
Sundry	2 650-00	65 243-74	67 893-74	37 558
Total	R761 000-43	R16 261 652-60	R17 022 653-03	R16 356 309

CSIR Budget 1970/71

Statement No. 3

A. OPERATING EXPENSES

ACTIVITIES	EXPENDITURE							FUNDS		
	Salaries R	Supplies and services R	Subsistence and transport R	Scientific services R	Grants and subsidies R	General expenses R	Amount recovered internally R	Total R	Parliamentary grant R	Recoverable expenditure R
CSIR laboratories and departments	12 913 462	4 279 204	573 528	580 121	—	1 792 650	2 653 200	17 465 786	9 364 800	8 120 986
Grants and subsidies	200 950	13 046	25 580	28 111	1 324 858	40 234	95 579	1 537 200	1 507 700	29 500
Total	13 114 432	4 292 250	599 109	608 232	1 324 858	1 832 884	2 748 779	19 022 986	10 872 500	8 150 486

B. CAPITAL EXPENDITURE

ACTIVITIES	EXPENDITURE						FUNDS		
	Books/ journals R	Technical equipment R	Furniture/ office equipment R	Vehicles R	Stores stock R	Buildings R	Total R	Parliamentary grant R	Recoverable expenditure R
CSIR laboratories and departments	94 400	2 570 716	75 885	50 170	3 000	1 300 000	4 094 181	2 395 500	1 698 681
Grants to universities etc.	750	100 951	698	—	—	—	102 400	102 400	—
Total	95 150	2 671 667	76 584	50 170	3 000	1 300 000	4 196 581	2 497 900	1 698 681
Grand totals							23 219 567	13 370 400	9 849 167

APPENDIX 4

QUESTIONNAIRE AS SUBMITTED BY THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION IN RESPONSE TO A REQUEST BY CHAIRMAN DIGGS

PART 1

I. Reasons for going into Southern Africa:

(a) When did company go to South Africa? The facility was established in 1958 by the U.S. Naval Research Laboratory. It has been a station in NASA's tracking network since 1960.

(b) What factors entered into decision to invest there? Unique geographic position for support of space vehicle launchings from Cape Kennedy and Western Test Range.

(c) What type of business or businesses are there? No business. United States receives and pays for a service from the station which is operated by CSIR, an agency of the South African Government.

(d) Where are these businesses located? Station is located near Johannesburg.

(e) Do you have business involvement in South-West Africa? No.

(f) In Rhodesia? No.

(g) In Angola? No.

(h) In Mozambique? No.

(i) If so, please describe your operations and locations in each of these places.

(j) How large is your investment in each of these places? Approximately \$12 million in South Africa.

(k) What is the rate of return on your investment? N/A.

(l) How does this compare with return in the United States? N/A; in other countries? N/A; in black Africa, if you are involved there? N/A.

II. Employees

(a) How many employees do you have in each of these businesses? There are no NASA employees at the station. The station is totally operated and staffed for NASA by the South African Council for Scientific and Industrial Research (CSIR), an agency of the South African Government. There are 280 employees (219 white, 61 black). There is one U.S. national (contractor employee) at the station for technical liaison.

(b) How many are expatriates? 53. (An expatriate is regarded as an employee who has left a foreign country to work in South Africa.)

(c) Of the locals, how many are: black? 58; white? 169; colored? Since there are no coloreds employed at the station, subsequent questions relating to them are marked "N/A."

(d) What percentage of your employees are: black? 21 percent; white? 79 percent; colored? N/A.

(e) What percentage of the employee payroll is paid to blacks? Approximately 4 percent; whites? Approximately 96 percent; coloreds? N/A.

(f) In 1970 (fiscal year 1971), what percentage of cash salaries was paid to blacks? Approximately 4 percent; whites? Approximately 96 percent; coloreds? N/A.

(g) How do you hire your African employees? whites? coloreds? NASA does not do any hiring. CSIR hires African employees from an agricultural group resident in the area of the station. Whites are hired through normal employment channels for technical personnel.

(h) Do you enter into labor contracts with, or respect to, your African employees? NASA has no direct relations with employees at the station. CSIR does not enter into labor contracts with whites or blacks with the exception of those directly recruited from overseas who must sign 3-year contracts to work at the station (at present, approximately 20 of the 53 expatriates).

(i) How many of your employees have incurred difficulties (fines? imprisonment? or threat of these?) because of labor contract provisions of the Bantu Labor Act? None.

(j) What are the average working hours per week for blacks? 42; whites? 42; coloreds? N/A.

(k) What is the average length of employment for blacks? whites? coloreds? Figures on average length of employment are not maintained. Turnover for blacks over the past 2 years has been about 6 percent and for whites 15 percent. However, many blacks and whites who joined the original station staff are still employed.

III. Wage practices:

NOTE:—There are no cases where blacks and whites are filling similar jobs.

(a) What is the average promotion rate for each group? Depends entirely on education and ability. In general, salaries for both groups are increased by one notch on the salary scale each year until the appropriate ceiling is reached.

(b) What are the training programs for each group? Be specific.

Whites: CSIR runs two training schemes—one for electronic technicians and one for training to the level of B.Sc. Engineering at local universities. The Technician Training Scheme is based on the Witwatersrand Technical College. No blacks are at present employed in these roles at the station.

Training costs and salaries during training in the Technician Scheme are paid by CSIR from CSIR funds. The costs of trainees while they are actually working at the station are charged to NASA. The cost of the training scheme at B.Sc. Engineering level has been met entirely by CSIR.

Blacks: No blacks who are employed have the educational qualifications for the above courses. On-the-job training is given.

(c) What was the average starting salary in 1960 for blacks? whites? coloreds? Starting salaries depend entirely on education, experience, and suitability for the job and vary widely for both groups. No meaningful figures can be given. But see III (m).

(d) What was it in 1970? See para (c) above.

(e) What is the usual salary (in statistical terms, what salary is the mode)? There is no "usual" salary in either group. But see III (m).

(f) What is the top salary of blacks? \$1,655; whites? \$12,369; coloreds? N/A.

(g) What is the bottom salary of blacks? \$533; whites? \$1,596; coloreds? N/A.

(h) What is the poverty datum line for your area? No relevant poverty datum is available for rural area in which station located.

(i) Without including payments in kind, how many of your employees receive salaries below this line? N/A.

(j) What percentage is this of your African employees? N/A.

(k) How are these answers changed if payments in kind are included? N/A.

(l) Is there a Government wage determination applicable to your African employees? Yes.

(m) If so, what is this wage? Salaries for blacks at the station range from \$533 to \$1,655, depending upon type of position and experience. The range by category is: unskilled employees—\$533 to \$1,037; vehicle drivers and foremen—\$654 to \$1,277; laboratory assistants—\$821 to \$1,655.

(n) Have you ever been fined or otherwise incurred difficulty for not complying with this determination? No.

(o) Do you pay wages in kind to blacks? Yes, housing; whites? No; coloreds? N/A.

IV. Fringe benefits:

(a) What are the following fringe benefits for each group? Specify differences for each group.

(i) Free medical aid.—CSIR pays half of cost of medical aid membership for white technical staff. Black employees do not have medical society but receive treatment in nearby Provincial hospitals at very small fee (a few cents). Free transportation is provided for medical attention.

(ii) Vacation leave.—Blacks: Up to 10 years' service—10 working days; Over 10 years' service—15 working days. Whites: Varies between 31 and 39 calendar days depending upon rank.

(iii) Sick leave.—Blacks: Up to 10 years' service—12 days full pay plus 12 days half pay. Over 10 years' service—28 days full pay plus 28 days half pay. In special cases, such as an employee suffering from tubercu-

lois, the above may be increased to 120 days full pay and 120 days half pay. Whites: 120 days full pay plus 120 days half pay.

(iv) Permanent disability benefits.—None for either group except possibly through the pension schemes.

(v) Termination.—No benefits for whites. Blacks receive payment in lieu of outstanding leave.

(vi) Low-interest housing loans.—The blacks at the station are provided with free accommodations on the station. Whites can, under certain circumstances, obtain assistance with the repayment of housing loans negotiated privately with building societies.

(vii) Educational assistance.—See III (b).

(viii) Insurance or death benefits.—A compulsory life insurance scheme exists for whites who contribute a portion of their salaries each month. No similar scheme exists for blacks.

(ix) Christmas bonuses.—Whites, none; blacks, \$6.65 per employee.

(x) Stock dividend plans.—N/A.

(b) Employee facilities—Are the following provided for all employees?

(i) Locker rooms.—Not provided for either group.

(ii) Restrooms.—Restrooms (toilets) are provided for both groups.

(iii) Lounges.—A lounge is provided for the white technicians who, in general, reside some 40 miles away from the station and, who, during numerous mission support periods, must work at other than normal hours and for extended periods of time.

(iv) Eating facilities.—The same food is available to blacks and whites, but the latter are provided with a dining room as they live offsite while blacks do not.

(v) Recreation facilities.—Formal facilities do not exist.

(vi) Are these facilities segregated? Restrooms and eating facilities are segregated.

(vii) If so, how do they compare? Be specific.

With the exception of the dining room, facilities are comparable. The dining room is open to whites only and is provided as a contractual obligation because the white staff may not live on the site and are required to work abnormal hours dictated by requirements of the operations. All the blacks live close to their place of employment and do not, in general, work abnormal hours.

A shop is provided for blacks to purchase their normal requirements, and profits from this shop are held in a properly controlled fund which is used only for the benefit of the black staff.

V. Labor relations:

(a) Does company engage in collective bargaining with blacks? Whites? Coloreds? To set pay? To set fringe benefits? To set procedures for employer-employee relations? There is no collective bargaining at the station for any of the employees.

(b) Do black workers have unions or work committees? Do coloreds? Do whites? There are no unions or work committees for any groups.

(c) Is there a complaint procedure? Complaints from all employees are dealt with by the heads of sections.

(d) What is dismissal procedure for each group? Whites? One month's notice; blacks? Twenty-four hours' notice.

VI. Services to employees:

(a) What training programs does your plant have? See III (b).

(b) What were the enrollment figures for these training programs in 1970 for whites? Nine technicians; blacks? None; coloreds? N/A.

(c) What educational programs or assistance do you provide your workers? See III (b).

(d) Do you have literacy programs for your workers? No.

(e) Do you provide the following: Free classes at outside schools, scholarships, educational tuition refunds, training abroad? See III (b).

(f) Do you have a scholarship program for your employees' children? No.

PART 2

I. Special Services:

(a) When a worker dies and his family is required to go to a reserve, do you provide legal, financial or educational assistance to the children and/or spouse?

CSIR does not provide assistance to the deceased's family except as necessary on humanitarian grounds.

(b) Does company assist workers with residence needs with respect to removals or helping families get residence permits? Residences are provided for all the black employees.

(c) Pass difficulties—Do you supply lawyers and legal assistance or counseling services to families with pass difficulties? CSIR provides counseling services for obtaining passes (work permits) to work as the station and is responsible for family residence registration.

II. To assess some factors relevant to the impact of the presence of your company in South Africa, information on the following should be both for the present and for the year your company opened its plant.

(a) What is the health situation of children in the areas of your plant or business? Black? Good; white? Good; colored? N/A.

(b) What is the incidence of Kwashiorkor (a starvation disease)? Black? None; white? None; colored? N/A.

(c) The rate of infant mortality? Black? Low; white? Low; colored? N/A.

(d) The average life span? About 70 years for all races.

(e) How far on the average do your workers have to come to work? Blacks? 1 mile; whites? 40 miles.

(f) Do you provide transportation for blacks? Live on station site, transportation not required; whites? Yes; colored? N/A.

(g) How many of your African employees cannot live with their spouses because of legal regulations against presence of Africans in the area? None.

(h) How do Africans' working conditions compare with whites', coloreds', even where basic attitude of company is supportive of change toward majority control or a multiracial society? Is support for change a mere hope or is it manifested concretely to your African employees? CSIR is operating agency. See IV.

(i) If so, how? N/A.

III. Charitable Contributions:

(a) Does company contribute to the South African Foundation? To the Institute of Race Relations? To the Black Sash Society? To the Christian Institute? To the National Union of South African Students? To Fort Hare, the University College of the North, the University College of Zululand, University College of West Cape Town? To educational or cultural organizations? If so, give name. To educational trusts for employee's children? NASA does not know whether CSIR contributes to these organizations; in any event, NASA funds would not be involved.

(b) What percentage of annual profits does company contribute to such organizations (do not include contributions to South African Foundation)? N/A.

IV. Company Attitudes in Practice:

CSIR is an agency of the South African Government. Questions are not applicable.

V. Border Industries:

(a) Is company in any border area? The station is not located in a border area.

(b) If so, do wages there on the average exceed Government wage determinations? Give specific documentation. N/A.

VI. Use of Political Insurance:

Has company ever used its influence or lobbied in support of apartheid in South Africa? Publicly? Privately? N/A.

PART 3

Alternatives:

(a) Has your company considered investing in the neighboring majority-rules states of southern Africa, Botswana, Lesotho, or Swaziland? Other station locations have been studied in these areas, but no practicable alternative has been found.

(b) Has your company considered investing in the homelands of bantustans? No.

(c) Has company ever lobbied for or supported apartheid in the United States? In South Africa? Publicly? Privately? N/A.

(d) Does company contribute to the South Africa Foundation? N/A.

(e) Has company supported Portuguese Government position with respect to the Portuguese territories? N/A.

PART 4

Role of U.S. Government:

(a) To what extent has company explored possibility of actively supporting change? NASA is working with CSIR concerning improvement in living conditions and opportunities for blacks at station.

(b) How can Government assist you in this endeavor? N/A.

(c) What is your relationship to the U.S. Embassy or Consulate commercial attaché? As a U.S. Government agency, NASA relies on information and assistance from the Embassy as necessary.

PART 5

Reappraisal of Company's Role in Southern Africa:

(a) How do you relate your presence in Southern Africa? To the apartheid policy of the South African Government or to the policy of the Portuguese Government? To the majority of the population? To the progress toward majority rule? The NASA presence in South Africa is based on the geographic position of that country in relation to Cape Kennedy and with respect to optimum observations of deep space and planetary missions.

(b) Has there been a recent reappraisal of your investment in Southern Africa? South Africa? Need for NASA facilities in South Africa, as in any country, undergoes periodic review and has been examined recently. South West Africa? N/A; Angola? N/A; Mozambique? N/A.

APPENDIX 5

THE DEPARTMENT OF DEFENSE REPLY TO "THOSE RECOMMENDATIONS OF THE CHAIRMAN IN HIS ACTION MANIFESTO OF DECEMBER 14, 1971

ASSISTANT SECRETARY OF DEFENSE,
Washington, D.C., March 30, 1972.

HON. CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: I am glad to supplement the Department of State's comment on your proposed "Action Manifesto" concerning those recommendations dealing with military training, research and development, and our military attachés in South Africa.

At present, the Department of Defense is not providing any training, including correspondence courses, to South African military which would have direct applicability to combat capabilities or to the enforcement of its internal policies. From time-to-time, an occasional representative of the South African military has participated or attended some activity such as medical conferences or air safety courses conducted by U.S. academic institutions. We believe, as noted in Mr. Abshire's letter, that precluding South Africans from attendance at such conferences or courses would not contribute to the basic purpose of the arms embargo, which is directed to military operations and internal security.

As I explained in my testimony before your committee, consistent with our arms embargo, we do not participate with South Africa in any form of research and development of military equipment. There has been no exchange of information between the United States and the South Africans as a result of U.S. Army's testing of the French Crotale missile system.

Our military attachés assigned to the Republic of South Africa perform the customary duties of reporting on matters of military interest in that country, as well as in much of the surrounding area. They are a necessary component of our diplomatic presence, which enables us to increase our awareness and understanding of the situation. In this capacity, they constitute a valuable channel of information which we believe is in our interest to continue.

Sincerely,

(Signed) JAMES H. NOYES,
*Deputy Assistant Secretary
Near Eastern, African and South Asian Affairs.*

APPENDIX 6

MEMORANDUM ON THE OPERATION OF U.S. INVESTMENT IN NAMIBIA

SUMMARY

At least 11 U.S. corporations have a direct involvement in Namibia, mainly in mining and prospecting. Of the projects involved, at least seven have initiated new commitments in Namibia since 1966, contrary to U.S. Government policy (1) in voting for United Nations General Assembly Resolution 2145 which terminated South Africa's mandate, (2) in supporting subsequent General Assembly and Security Council actions in regard to the illegality of South Africa's occupation of Namibia, and (3) in accepting the Advisory Opinion of June 1971 of the International Court of Justice on the legal consequences for states of South Africa's continued occupation of Namibia.

2. Nearly all the activity of U.S. interests is based on agreements with the South African occupation authority, which expropriated these interests from the companies which originally held them under German colonial rule. There does not appear to be any basis in law for this action by the South African Administering Authority.

3. The rate of taxation is relatively low, and almost all the profit from mining operations, where U.S. interests are concentrated, (89 percent in the case of Tsumeb) is taken out of Namibia as dividends to foreign investors. Resources are being rapidly depleted, and there is real concern that by the time Namibia attains its independence, it will have been stripped of all its original wealth. The return to the African labor force in the form of wages is negligible compared with the benefits to foreign corporations, and to the South African Government in the form of taxes, royalties, and the strategic and political value of foreign commitments.

4. The major item of U.S. economic involvement in Namibia is the Tsumeb Corp., Ltd., in which the Newmont Mining Corp. and American Metal Climax together hold a 65 percent interest, and which is managed by Newmont. Since 1946, this corporation, the most prominent economic entity in the territory, has shown an annual average rate of return on the original investment of 348 percent. With intensive exploitation of the Tsumeb mine, one of the richest in the world, the average grade of remaining ore reserves has fallen greatly. The Tsumeb Corp. is the largest single employer in Namibia of migrant labor; it pays considerably less to its African workers than the other major users, South Africa's Consolidated Diamond Mines. White wages are over 10 times those of Africans.

5. South Africa has extended the whole panoply of apartheid laws to Namibia—a system under which the African has no freedom of movement, no freedom of residence, no right to own land, no political rights, no right to participate in the Central Government, no right to family life, no right to education, no freedom of employment, no rights with respect to the conditions of employment. In 1967, the International Commission of Jurists found that "the system of recruitment of African workers operating in South-West Africa today is unique in its organized and efficient application of conditions that are akin to slavery." (ICJ, *Apartheid in South Africa and South-West Africa*, pages 24-25 (1967).)

6. A general strike of the contract laborers in December 1971-February 1972 showed a widespread refusal to accept the contract-labor system, which, as indicated above, deprives the people of Namibia of basic human rights, and furthermore relies on people being forced by hunger to seek work in white-owned enterprises.

7. The presence of American investors in Namibia is of great importance to the South African administration, because of the tax payments, which contributes to the profitability of the occupation, and because their mining and particularly prospecting activities coincide with the South African priority aim of determining and exploiting the mineral resources of Namibia as quickly as possible. Many of the companies, especially Newmont and Amax through the Tsumeb Corporation, go much further than required by local legislation. They voluntarily impose a color bar in their employment policy, signed the Grootfontein agreement of February 1972, which modified the contract-labor system, and continue to take full advantage of the powerlessness of their African workers.

8. A more detailed analysis of U.S. interests in Namibia, and the context in which they operate, is attached. Only information which appears well substantiated has been included. Since the South African Government has progressively reduced the amount of published information on Namibia, and the companies are reluctant to disclose information, especially on labor conditions, a complete picture is not feasible. What is available, however, indicates that any claim by the corporations to be innocent victims of circumstances beyond their control would be a distortion of reality.

9. It is the purpose of the attached memorandum (1) to review the basic facts on U.S. companies operating in Namibia, the comparative investment and profit picture of these companies, and the conditions of employment there, and (2) to show the relationship of these extraordinary profits to the exploitation of the people of Namibia—exploitation which in turn bears a direct relationship to the revocation of the mandate and the consequent obligation of all States "to refrain from any dealings with the Government of South Africa implying recognition of the legality of, or lending support or assistance to, such presence and administration."

MEMORANDUM ON THE OPERATION OF U.S. INVESTMENT IN NAMIBIA

I.

The major U.S. interests in Namibia, as far as can be determined at present, are as follows:

Tsumeb Corp., Ltd.

29.2 percent is held by Newmont Mining Corp., which manages the operation. Newmont also has a 57.5 percent interest in O'okiep Copper Co. of South Africa, which has a 9.5 percent interest in the Tsumeb Corp.;¹ this gives Newmont a total interest of 34.6 percent.

29.2 percent is held by American Metal Climax. Amax also has an 18 percent interest in O'okiep,² giving it a total interest in Tsumeb of 30.4 percent.

The Tsumeb Corp. is therefore managed, and 65 percent controlled, by U.S. corporations. Further details of this important operation are given separately in section II.

Navarro Exploration Co.^{2a}

Navarro is a wholly owned subsidiary of Zapata Norness, Inc., of Houston, Tex. Zapata acquired Navarro in 1968. It has operated a copper mine at Onganja since 1967, and reported in 1969 that the profit contribution from Navarro, although negligible that year, "should become substantial in 1970 and the years beyond."³ Output from the Onganja mine has been considerably expanded towards the end of 1969, reaching about 200 tons of copper per day. The reserves were reported to be limited.⁴

Navarro is also engaged in mineral exploration, and has over 750,000 acres of prospecting properties under lease, on which a wide range of minerals, including silver, zinc, lead, and molybdenum, have already been discovered.

¹ Annual Report of the Newmont Mining Corp. for 1971.

² Annual Report of American Metal Climax for 1971.

^{2a} Companies initiating new projects after 1966, when the United States voted for the U.N. General Assembly resolution declaring South Africa's mandate for Namibia terminated.

³ Annual Report of Zapata Norness for 1969.

⁴ United Nations Document, Conference Room Paper SC1/72/8, July 5, 1972.

U.S. Steel^{2a}

This company entered Namibia after 1966, in 1969 it took an interest in the Africa Triangle Co.'s prospecting ventures in Namibia, originally reported as 30 percent, but later as 1.3 percent.⁵ The other shareholders are Anglovaal, De Beers and the Anglo-American Corp. of South Africa, together with Tsumeb. In March 1971 the company decided to move out its laboratory, vehicles and plant, leaving only a skeleton staff to continue investigations, although previously it had announced that results justified systematic drilling of the copper-bearing bands.⁶

Bethlehem Steel^{2a}

The company has been prospecting in Namibia since 1952, but abandoned all its original areas. In 1970 it was reported that Bethlehem had entered into a prospecting agreement with Tsumeb to explore for fluorspar near Grootfontein. The Johannesburg Star noted: "The decision is considered of particular interest in respect of South-West Africa as it runs contrary to publicly expressed United States Government policy on investment there."⁷

Nord Resources^{2a}

Nord Mining, a subsidiary of Nord Resources of New Mexico, holds huge concessions in the Omaruru area. Late in 1970 it announced its intention of developing a wolfram mine, at a capital cost of \$7 million. It increased its holdings to three further concession areas in 1971.⁸ Nord has also announced the discovery, in partnership with a French firm, of a large deposit of copper.⁹

Phelps Dodge^{2a}

Phelps Dodge has applied for concessions over "a vast tract of land" in the north of Namibia, and has opened offices in Johannesburg to supervise its new southern Africa operation.¹⁰

Hanna Mining and the Marcona Co., according to recent unconfirmed reports, are engaged in a mineral probe.¹¹

Chevron Regent^{2a}

This is a consortium of Chevron (Standard Oil of California) and Regent Petroleum (a subsidiary of Texaco). In January 1971 they were granted exploration rights for oil in a new 4,000 square mile offshore concession.¹² They later withdrew, and were granted another concession further out to sea, as a sublease from the Marine Diamond Corp.,¹³ which had a pre-1966 concession.

Brilund Mines

This company is incorporated in Ontario, Canada, and is associated with Syracuse Oils of the United States, all of its officers, directors, and managers come from New York and New Jersey, and the executive offices are in Mount Vernon, N.Y. Brilund's interests lie entirely within Namibia, in three wholly-owned subsidiaries: Etosha Mineral (Pty) Ltd., Etopet Minerals (Pty) Ltd., and Etosha Petroleum (Pty) Ltd. Heavy involvement in a search for minerals was abandoned in late 1970, but the search for oil continued. In December 1970 Etosha announced that it had discovered 11 "very favorable" potential oil structures, the immediate drilling sites for the next phase of its program. Since then, however, there has been no further news, and it appears that Etosha Petroleum has sold much of its equipment in Namibia and begun to move all the heavy equipment into Angola, where it was reportedly leased to another oil company. Brilund Mines also ceased operations, although it still retains its concession.¹⁴

⁵ United Nations Document, A/8423/Add. 3 (Part I), September 27, 1971; Conference Room Paper SC1/72/8.

⁶ United Nations Document, Conference Room Paper SC1/72/8.

⁷ *The Star*, Johannesburg, November 14, 1970.

⁸ United Nations Document, Conference Room Paper SC1/72/8.

⁹ *Wall Street Journal*, November 4, 1971.

¹⁰ *South African Financial Gazette*, Johannesburg, October 9, 1971.

¹¹ Winifred Courtney and Jennifer Davis, *Namibia: United States Corporate Involvement* (The Africa Fund, together with the World Council of Churches Program to Combat Racism, New York, March 1972).

¹² *Ibid.*

¹³ United Nations Document, Conference Room Paper SC1/72/8.

¹⁴ *Ibid.*, also W. Courtney and J. Davis, *op. cit.*

Getty Oil Co.

Getty Oil Co. owns a 46 percent interest in Tidal Diamonds (SWA) (Pty) Ltd., through its subsidiary, Tidewater Oil Co. Tidal Diamonds retrieves high-quality diamonds from an offshore concession area.¹⁵ Getty Oil is also involved through Getty Minerals S.W.A. (Pty) Ltd., which obtained oil prospecting concessions off the coast of Namibia in June 1972.¹⁶

Arthur G. McKee^{2a}

The Western Knapp Engineering Division has won a contract for the development of the Rossing uranium mine from Rio Tinto-Zinc, a United Kingdom-based corporation. It will involve engineering, procurement, design, and construction work.

This mine has been the subject of great controversy in the United Kingdom, especially as it has been made possible by a large purchase contract with the United Kingdom Atomic Energy Authority. It is alleged that this will make the United Kingdom nuclear weapons program largely dependent on the goodwill of the South African occupation authorities in Namibia. The mine is due to enter production in 1976. South Africa's position as a major supplier of uranium will be enhanced by this project. South Africa has not signed the Nuclear Nonproliferation Treaty. The South African Government recently announced the construction of a pilot plant to apply its new uranium enrichment process of ion exchange. This could be a threat to the N.P.T., since South Africa is already known to be a supplier of uranium in confidential deals not covered by peaceful uses safeguards.

Companies with offices in Namibia

These are: Burroughs Machines, Ltd.; Canada Dry; Firestone (S.A.) Pty., Ltd.; Galion (Pty.); General Tire and Rubber (S.A.) Ltd.; National Cash Register (S.A.) Pty., Ltd.; Royal Crown Cola; Singer South Africa (Pty.) Ltd.; Caltex Oil (S.A.) Ltd.; Mobil Refining Southern Africa (Pty.) Ltd.; Valvoline Oil (S.A.) Pty., Ltd.¹⁷

II. THE TSUMEB CORPORATION, LTD.

Tsumeb represents by far the largest item of U.S. investment in Namibia, and dominates the economy of the territory. The Tsumeb mine alone accounts for over 80 percent of base mineral production in Namibia,¹⁸ and for over 20 percent of all Namibian exports; it is also the largest single employer of contract labor.

The Tsumeb Corp. has a 20 percent interest in the Africa Triangle Co., and a 75 percent interest in a joint venture with the South-West Africa Co., prospecting for copper. Substantial progress was reported for this venture in the year 1971, and the partners were reported to be applying for a mineral grant to cover this ore body.¹⁹

The corporation itself operates the original Tsumeb mine, the nearby Kombat mine, and the new Matchless mine which was closed down soon after the commencement of the operation there, during the general strike; it remains closed.²⁰

The Tsumeb mine is the most lucrative in Namibia, and said to be one of the world's richest in terms of the grade of ore produced over the years.²¹ It is also by far the most profitable of all the projects of the Newmont Mining Corp., which manages the mine; it has commented that Tsumeb, together with O'okiep in South Africa, "enabled the company to consider projects much larger in scale than was previously possible."²² A local historian comments, "No mine . . . ever returned so large a cash flow for such a relatively small investment as Tsumeb."²³ There was relatively little risk involved in the American invest-

¹⁵ Financial Gazette, January 29, 1971.

¹⁶ Information supplied by the Department of Commerce: Hearings before the Subcommittee on Africa, House of Representatives; U.S. Business Involvement in Southern Africa, pt. 1, U.S. Government Printing Office, 1972; p. 269, Windhoek Advertiser, June 22, 1972.

¹⁷ Ibid.

¹⁸ United Nations Document, A/8423/ Add. 3 (pt. I).

¹⁹ United Nations Document, Conference Room Paper SC1/72/8.

²⁰ Annual report of Newmont for 1971.

²¹ Interview with Herbert Drechsler, Columbia School of Mines, former employee of Tsumeb; May 3, 1972, quoted in Terence M. Strong unpublished M.A. Thesis, "Newmont mining Corp., Southern Africa Operations," Columbia Business School B9501, May 15, 1972.

²² Annual report of Newmont for 1971.

²³ G. Sohngé, "Tsumeb, a Historical Sketch," South-West Africa Association, Windhoek, 1967.

ment, since as early as 1922 the Administrator of South-West Africa reported, "Both from its richness and the size of its ore bodies, Tsumeb rates as one of the greatest base metal propositions in the world."²⁴

The above-average profit generated does not result from the efficiency of the operation in terms of output per employee,²⁵ but is a factor to some extent of the low-tax payments, but mainly of the natural wealth of the ore body, and the fact that this fixed resource has already been largely depleted. In 1947, when Newmont started output at the mine, one ton of ore contained 9.5 percent copper, falling to 2.44 percent in 1971; 29.3 percent lead, falling to 12.22 percent; and 3.91 percent zinc.²⁶ It is estimated that present known resources will last only another 15 years. Two further deep-level shafts are being sunk to speed up the recovery of the ore.²⁷

The exploitation of the mine has given Newmont an annual average rate of return on its original investment over the past 20 years of 347.79 percent.²⁸ The result was the same for Amax. Their total assets grew 16 times after 1947, and profits also increased about 16 times.²⁹ This was due partly to the very high dividend payout, subject to no restrictions on the export of dividends; in 1970, for example, 89 percent of Tsumeb's net income was paid out in the form of dividends to foreign corporate interests.³⁰ Reinvestment was therefore a small proportion of the total income; even so, the corporation has financed an investment which now amounts to about \$80 million, from an original investment by the consortium in 1946 of just over \$4 million.³¹ The gross value of metals produced by the mine amounted to \$824,518,865 by June 30, 1969.³²

III. THE IMPORTANCE OF TSUMEB

The Tsumeb Corp. is by far the major and most conspicuous item of United States investment in the occupied territory of Namibia; it is also of central importance to the illegal administration there. Taxes paid to the "South West Africa Administration" up to June 30, 1969, amount to \$125,304,620.³³ In 1970, the tax bill of \$14 million came to nearly 23 percent of the mining sector's contribution to public revenue and 8.6 percent of the territory's annual budget.³⁴ The operation of the mine clearly has strategic implications for the continued occupation of Namibia by South Africa: the manager of the corporation, Mr. J. A. Batledge, said in one interview that Tsumeb's tax payments, together with its location, justified the construction of the strategically important road between Cape Town and Luanda, Angola.³⁵

The Tsumeb Corp. employs 40 percent of all contract laborers involved in mining, making it the largest single employer of migratory labor, "and hence could alter the whole spectrum of black wages in the territory", according to a report of the South African Institute of Race Relations.³⁶ It would also be a relatively simple matter for the corporation, since doubling the wages of all African employees would have reduced the net profits of the Tsumeb Corp. by only 13 percent.³⁷ It could increase African wages by six times before the return on current equity at Tsumeb fell to the Newmont average.³⁸ Yet it lags well behind the South African-controlled Consolidated Diamond Mines, the other major user of contract labor in Namibia: Tsumeb's minimum wage for Africans is about R17 (\$24) per month, after the raise following the strike; CDM's is R31.20 (43.70), and a large

²⁴ 1922 Report of the Administrator of South-West Africa, quoted in United Nations Document A/AC.109/L.154, Oct. 16, 1964.

²⁵ See T. Strom, *op. cit.*

²⁶ Annual reports of Newmont for 1947 and 1971.

²⁷ Annual report of Newmont for 1971.

²⁸ Calculated by T. Strom, *op. cit.*, from the annual reports of Newmont for 1947-71, inclusive.

²⁹ Annual reports of Newmont for 1947 and 1971.

³⁰ Annual report of the Tsumeb Corp., Ltd. for 1970.

³¹ Financial Gazette, June 18, 1971.

³² Tsumeb Corp. advertisement in Wall Street Journal, Sept. 5, 1969.

³³ *Ibid.*

³⁴ United Nations Document A/8398/Add. 1, December 6, 1971; also Tsumeb Corporation advertisement in Wall Street Journal.

³⁵ Interview of Tsumeb, March 9, 1971; Tamir Hultman, Reed Kramer, "Overseas Mining Firms Continue to Snub U.N.," Sunday Nation, Nairobi, October 3, 1971.

³⁶ John Kane-Berman, The Ovambo Strike, South African Institute of Race Relations, February, 1972.

³⁷ T. Strom, *op. cit.*

³⁸ Calculated from figures given in T. Strom, *op. cit.*

proportion of its workers earn above the minimum. The lowest-paid white worker at Tsumeb was paid \$444 per month in 1971, plus bonuses and fringe benefits.³⁹

It appears that under these conditions no African will work at Tsumeb unless absolutely forced to. As Mr. Ratledge admitted, "When Ovamboland has a good rainy season, Tsumeb has more difficulty recruiting employees. It it's a good year and they don't have to work, they stay at home."⁴⁰ In spite of the raise, almost the entire Tsumeb work force, which was among the first to come out on strike in December, 1971, has refused to return. Newmont reports that "most of the workers are new and must be trained."⁴¹

The labor policy of Newmont is in marked contrast to another foreign investor, Rio Tinto-Zinc, with which it is closely connected through participation in the South African Palabora mine. In its new uranium mine in Namibia, RTZ is refusing on principle to use migratory labor. Its chairman stated at the 1972 Annual Meeting in London, "I am totally opposed to the contract labor system and will have nothing whatever to do with it . . . We are going to employ our labor without the contract system."⁴² At Tsumeb, on the other hand, there are 5,385 African employees, and with the exception of less than a hundred clerical workers, all are 1-year contract laborers separated from their families.

There is no legal requirement to use contract labor; the adoption of the color bar practices which were legally enforceable only in South Africa was also entirely voluntary on the part of the United States interests involved. It had the advantage for them of convenience, keeping relations with South Africa smooth, and providing excellent profits. Newmont participated voluntarily in the new contract system set up at Grootfontein in response to the strike; one of the Directors of Newmont, Mr. D. O. Pearce, flew to Namibia to participate in negotiations, and was one of the company representatives to sign the agreement. This conflicts with U.S. Government policy that there should be no dealings with South Africa which reinforce its control over Namibia.

IV. GENERAL BACKGROUND

The major concern of those interested in the independence and independent economic development of Namibia has been voiced by the United Nations: "The country runs the risk of finding itself, in the not too distant future, without the raw materials that now provide the main support for the money economy."⁴³ This is also of concern to the United States and other countries, which are likely to find themselves giving "aid" to a newly independent Namibia, when it has lost the means to build up self-sustaining growth based on its own resources. National leaders such as Chief Kapuuo of the Hereros have protested violently at the exploitation of Namibia's natural resources; Kapuuo has written, "This country which is our country, is being exploited by greedy entrepreneurs, stripped of its wealth, and rendered barren for the future. Our fear is that when freedom finally comes to this land, it will be returned to us with no minerals left. Thus you will see the one wonderful aspect which we have for developing the land for the wellbeing of all its people will have been taken away from us."⁴⁴

In 1946, before the expansion of the mining sector in which foreign interests predominate, the proportion of the territory's GDP accruing to foreign capital was 8 percent; by 1962, it had risen to 31.7 percent.⁴⁵ The South African Commission of Enquiry on South-West Africa, known as the Odendaal Commission, reported in 1964, "It is therefore a feature of the economy of South West Africa that with the development of mining the ratio of the GNP to the GDP has diminished considerably." The Commission stressed the prime importance for South Africa of "the rapid economic development of known and determinable resources." This recommendation has been carried out enthusiastically: in 1966

³⁹ Tsumeb Corporation advertisement in Sunday Times, Johannesburg, September 26, 1971.

⁴⁰ T. Hultman, R. Kramer, Sunday Nation.

⁴¹ Annual report of Newmont for 1971.

⁴² Unofficial transcript of the Annual General Meeting of Rio Tinto-Zinc, May 17, 1972, in London.

⁴³ United Nations Document A/AC.109/L.154, October 16, 1964.

⁴⁴ Letter of September 3, 1971, from Chief Clemens Kapuuo to his lawyers in London reproduced in a press statement by the Africa Bureau, London.

⁴⁵ Roger Murray, "Namibia: An initial survey of the pattern of expropriation of the mineral resources of Namibia by the South African Government and overseas companies"; paper for the Namibia International Conference, Brussels, May 26-28, 1972.

the total value of mineral sales reached \$177.9 million, over half the territory's GDP, and in 1970-71 the total reached \$182 million. Base minerals, as opposed to diamonds, are of increasing importance in the total mineral production: they rose from 33.8 percent in 1966 to 46 percent in 1970-71.⁴⁶ In 1970 over 100 prospecting grants were issued, and the South African Department of Mines reported a jump in prospecting fees from \$63,000 in 1966 to \$700,000 4 years later. The South African "Financial Gazette" commented, "Mineral development and exploration in South West Africa is booming as never before. With 18 companies engaged in mining production and a further 44 or so prospecting * * * there is a possibility of a bonanza that will alter the whole structure and future of the area."⁴⁷

The advantage of rapid exploitation of natural resources for the South African occupation regime is obvious. The Tsumeb Corp., for example, pays 30.26 percent of its gross "rent" direct to the South African Government, and only 6.39 percent in the form of wages to Africans. Dividends remitted abroad accounted for 45.98 percent.⁴⁸

The South African occupation administration controls all mineral rights, and collects royalties and prospecting fees. This arises from an interpretation of the original mandate, which authorized South Africa to administer the territory, as a license to exercise over it the sovereign rights claimed by a colonial power, which would include the expropriation of land and mineral rights which the original German regime had vested in a number of companies, individual settlers, or the Africans in certain areas. The result of South Africa's economic policies is that 60 percent of the land, including the best farming land, diamond areas, all ports and mineral-rich areas, is assigned to the 16 percent of the population that is white settlers. This conflicts with the purpose of the mandate, which was to "promote the moral and material well-being and the social progress of the inhabitants of the territory."

Just as expropriation of the mineral rights in the territory is of dubious legality, even more so is the distribution of oil rights. Prospecting concessions for oil were distributed in 1968 by the administration of Namibia, through the agency of the Southern Oil Exploration Co. (SWA) Pty, SWAKOR, a subsidiary of the South African Government's Southern Oil Exploration Corp., SOEKOR. A condition of all the concessions in Namibia is that any company striking oil must transfer 10 percent of its shares to SOEKOR in return for a refund of part of the exploration costs, while royalties would be paid to SWAKOR. This arrangement seems to have alarmed the big oil companies so much that they have abandoned their concessions; this includes Gulf Oil and a consortium including the H. M. Mining and Exploration Co., Syracuse Oils, and Woodford Oil and Gas. Etosha Petroleum's concession predates the SOEKOR distribution, and Chevron-Regent abandoned its SOEKOR bloc in favor of Marine Diamonds Corp.'s sublease.

The economic life of Namibia has been rapidly integrated into that of South Africa since 1966, an obvious prelude to total annexation of the territory. This has been greatly facilitated by the fact that many of the large foreign interests have operations in both areas, and administer them together. In 1969 the South West Africa Affairs Act (No. 25 of 1969) made all taxation other than individual income tax payable to the central government in Pretoria, and mining legislation was also to be administered from there.⁴⁹ U.S. interests in Namibia are therefore paying taxes, royalties and other items directly into the South African Treasury, actions which affirmatively support and assist the control exercised over Namibia by the occupation regime.

V. CONDITIONS FOR AFRICAN LABOR IN NAMIBIA

The Namibia economy as such is extremely healthy. GDP per capita is the second highest in Africa, after Libya, and one of the 15 highest in the world.⁵⁰ GDP rose by 10.23 percent between 1963 and 1969.⁵¹

⁴⁶ United Nations Document A/8148/Add. 1, November 30, 1970; R. Murray, *op. cit.*

⁴⁷ "Financial Gazette," March 13, 1970.

⁴⁸ T. Strom, *op. cit.*, calculated from 1970 figures.

⁴⁹ R. Murray, *op. cit.*

⁵⁰ United Nations Economic Commission for Africa, "Economic Indicators 1968."

⁵¹ G. M. E. Leistner, "South-West Africa's Economic Bonds With South Africa", in Anthony Lejeune (ed.), "The Case for South-West Africa" (South African Embassy, London, 1971).

However, with a third of the GDP going outside the country, the participation of the inhabitants is restricted. Even more serious is the extreme imbalance in distribution of the benefits. In 1966 the average GDP per capita was \$651,⁵² and estimated distribution was as follows:

GDP per capital, 1965

	<i>Randa</i>
Total population.....	380
Whites only.....	1, 602
Nonwhites, Northern sector (i.e., Africans).....	61
Nonwhites, police zone (Africans and Coloreds, or mixed race who have much greater economic opportunities and would tend to raise the average)	229

Assuming a constant distribution of GDP, this would mean that in 1970 the figures would be:

Total population.....	467
Whites only.....	2, 073
Nonwhites, Northern sector (Africans).....	79
Nonwhites, police zone (Africans and Coloreds).....	279

In 1969, over 30 African countries had higher GDP per capita than the Northern sector of Namibia, which is where over half of the Namibians live. This area accounted for only 3.5 percent of the national GDP in 1951.⁵³

Average income per head for 1967 was given as \$2,242 p.a. for whites, and \$85.40 for nonwhites, (that is, Africans) in the northern sector.⁵⁴ The latter figure may even be inflated, since the estimated income in 1956 was only \$23 p.a.⁵⁵ probably the lowest in Africa. Relying on subsistence agriculture, it would be surprising if income had increased to that extent. Nor do the Africans receive undue subsidy from the administration: only 18 percent of the direct expenditure in the 1970-71 budget for Namibia goes to the Black 84 percent of the population. Eighty-two percent goes to the white settlers.⁵⁶

The majority of the working population is employed through the contract system, whereby migratory labor is taken on for contracts of about 1 year, after which they return to the reserve area where their families are confined. The system used to be organized by the South-West African Native Labor Association, SWANLA, in which employers and the administration had interests. Workers would be classified by SWANLA into categories based on physical fitness, and then labeled and sent out in batches to meet orders from the employers. It was a criminal offense for the worker to break the contract in any way. Africans found in a white area without a contract or other justification for being there could be assigned as a laborer in public works, or to a private employer. There were of course no trade unions, and strikes were a criminal offense.⁵⁷

It was in response to this whole system, as well as to the wages and conditions imposed, that almost the entire contract labor force went on strike in December 1971, the strike being partially resolved by an agreement on a new system, reached at Crootfontein between the Government of South Africa and the "Governments" of Ovambo and Okavango,⁵⁸ which are local administrations set up by the South African Government. The strikers were not consulted about the settlement. An experienced political commentator in South Africa refuted claims that this met the strikers' demands that the contract labor system should be abolished. "The contract labor system is another term for the migratory labor system, and as a system it remains intact. Certain elementary safeguards have been inserted to ensure that the worker at least knows what is due to him."⁵⁹

⁵² "South African Statistics," 1968, and "Quarterly Bulletin of Statistics," March, 1971.

⁵³ "Area Handbook for the Republic of South Africa", U.S. Government Printing Office, Washington 1971.

⁵⁴ R. Murray, *op. cit.*

⁵⁵ D. C. Krogh, "The National Income and Expenditure of South West Africa" (1920-56)", in "South African Journal of Economics," 1960.

⁵⁶ United Nations Document A/8423/Add. 3 (Part I), September 27, 1971.

⁵⁷ United Nations, "A Principle in Torment III: The United Nations and Namibia," 1971.

⁵⁸ Mr. M. C. Botha, South African Minister of Bantu Affairs and Development, reported in Windhoek Advertiser, Windhoek, Jan. 21, 1972.

⁵⁹ Stanley Uys, "Vorster Seals Off Restless Ovambolands", The Observer, London, Jan. 30, 1972.

A subsequent report showed that the workers' grievances had not changed after the settlement. One of them is reported as complaining, "Why must Ovambo stay in the compound? The cross above the gate is like a graveyard. Why must we sleep on concrete beds? They freeze our blood at night and we get sick. The food is pig food—a small piece of fish at supper. There has been no change in the contract. They broadcast for boys. We go there and find ourselves rounded up. They force the people to be recruited. . . . We don't see any change in the system. . . . This evil system still remains."⁶⁰

There have been recurrent disturbances, as workers return only to find that assurances that their demands have been met were untrue. White officials at Crootfontein, the recruitment center, had "serious difficulties" with two groups of Ovambo workers arriving to work on the mines. Seventy of them refused their food ration; the other group of 120 refused to have their photographs taken for labor registers. At Tsumeb, Ovambo workers were for some time refusing to be medically examined. There have been further strikes, and the burning down of workers' compounds.

A study of the contract labor system as seen by the Ovambo workers was published by the Christian Institute, and concludes that "contract labor, although undertaken in the majority of cases on a voluntary basis, is the result of a choice between hunger and migrant labor." Replies to a questionnaire from more than 1,000 of the workers shows that many of them lose touch with their homes, from adulterous associations and contract venereal diseases. Divorce and illegitimacy used to be unknown, but are now common events in Ovambo social life. Even those who are faithful to the idea of family life find that their children no longer recognize them when they come home from long contracts. Heavy drinking is also a major problem, and is regarded as a result of the contract labor system.⁶¹

The failure to improve the system is largely the result of actions by the employers. The president of the Association of Mining Companies of South West Africa, Mr. W. H. Bailey, said after the settlement that the closing of SWANLA had deprived employers of an organization which had protected their interests. He reported that the industry would have to form an employers' association to protect its interests in the labor market.⁶² Meanwhile, of course, the workers are prohibited by law from forming labor organizations. There have in fact been a series of "wage maintenance" agreements by employers' groups. The Institute of Race Relations report explains: "To stop wage rates from going up, different groups of employers have entered into agreements not to compete against one another by offering higher wages. Government officials are encouraging them to do this."⁶³ Even the conservative *Financial Mail* comments: "clearly exploitation of unorganized, voiceless workers continues." It reports a statement from the Department of Bantu Administration, Pretoria: "Employers looking for labor will henceforth have to apply to the labor bureau where all work-seekers will also have to register. Any employee who illegally deserts from his services can be considered to be in a particular area without permission. He may be prosecuted and removed from the area."⁶⁴

For the employers, there is no real problem. A member of the Master Builders Association, which met to consider a minimum recommended hourly wage for unskilled Africans—which turned out to be exactly one-third of that in the Transvaal—commented: "There are many thousands of Ovambo to choose from, and when they are hungry they will return to work."⁶⁵

⁶⁰ Quoted in J. Kane-Berman, *op. cit.*

⁶¹ Miss Rauha Viopio, paper for the Christian Institute, Johannesburg, quoted in J. Kane-Berman, *op. cit.*

⁶² United Nations Document, Conference Room Paper SC1/72/8.

⁶³ J. Kane-Berman, *op. cit.*

⁶⁴ *Financial Mail*, Johannesburg, Apr. 7, 1972.

⁶⁵ *Financial Mail*, Feb. 11, 1972.

APPENDIX 7

COVER PAGE AND SCHEDULE OF THE AWARD/CONTRACT BY THE DEPARTMENT OF DEFENSE WITH PAM-AM, THE U.S. CIVILIAN CONTRACTOR OPERATING STATION 13 IN SOUTH AFRICA

1. CONTRACT (Proc. Inst. Ident.) NO EO8606-68-C-0040		2. EFFECTIVE DATE 01 JUL 68		3. REQUISITION/PURCHASE REQUEST/PROJECT NO. ETO 69-		4. CERTIFIED FOR NATIONAL DEFENSE UNDER ROSA REG. 2 AND/OR THIS REG. 1 RATING CODE: _____		40	
5. ISSUED BY Air Force Eastern Test Range Patrick Air Force Base, Florida Buyer: Jack C. Clark, Col., USAF (ETY)		6. ADMINISTERED BY <i>(If other than block 5)</i>		7. DELIVERY TOB DESTINATION <input type="checkbox"/> Other (See Schedule)		8. CONTRACTOR NAME AND ADDRESS CODE: _____ FACILITY CODE: _____ <i>(Street, city, county, State, and ZIP code)</i> Pan American World Airways, Inc. Pan Am Building New York, New York 10017		9. DISCOUNT FOR PROMPT PAYMENT N/A	
11. SHIP TO/MARK FOR N/A		12. PAYMENT WILL BE MADE BY Accounting and Finance Officer Air Force Eastern Test Range Patrick Air Force Base, Florida 32925		13. THIS PROCUREMENT WAS <input type="checkbox"/> ADVERTISED, <input checked="" type="checkbox"/> NEGOTIATED, PURSUANT TO: <input checked="" type="checkbox"/> 10 U.S.C. 2304 (a)(2) <input type="checkbox"/> 41 U.S.C. 253 (a)		14. ACCOUNTING AND APPROPRIATION DATA See Schedule, PART XXVIII, "Availability of Funds"			
15. ITEM NO.	16. SUPPLIES/SERVICES	17. QUANTITY	18. UNIT	19. UNIT PRICE	20. AMOUNT				
	OPERATION, MAINTENANCE AND LOGISTICS SUPPORT OF THE TEST SUPPORT FACILITIES AND RELATED ACTIVITIES OF THE AIR FORCE EASTERN TEST RANGE (AFETR). SEE PAGE 2 FOR THE STATEMENT OF WORK. U.S. Expenditures for: U.S. End Products <u>1%</u> of each invoice. U.S. Services <u>79%</u> of each invoice. Transportation on U.S. carriers <u>1%</u> of each invoice. MAILING DATE: 14 June 1968					Approved 6 Jun 1968 s/Fred J. Higgins FRED J. HIGGINS Major General, USAF DCS/Procurement and Production Headquarters AFSC			
21. CONTRACTING OFFICER WILL COMPLETE BLOCK 22 OR 26 AS APPLICABLE		TOTAL AMOUNT OF CONTRACT: \$102,097,000							
22. <input checked="" type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 3 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuance sheets for the contract and to keep the rights and obligations of the parties to this contract that is subject to and governed by the following documents: (a) this award/contract, (b) the contract documents , and (c) all laws, provisions, representations, certifications, and specifications, in one or more of which the contractor is a party. (After business are listed below.)		24. <input type="checkbox"/> AWARD (Contractor is not required to sign this document.) This is on Solicitation Number _____ including the additions or changes made by you (see list of additions or changes set forth in full above), is hereby accepted as to the items listed above and on any continuation sheets. This award constitutes the contract with the contractor and the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.							
23. NAME OF CONTRACTOR BY: s/R. S. Mitchell <i>(Signature of person authorized to sign)</i>		27. UNITED STATES OF AMERICA BY: s/David M. Jones <i>(Signature of Contracting Officer)</i>		25. DATE SIGNED 23 May 68		28. NAME OF CONTRACTING OFFICER (Type or print) DAVID M. JONES, Maj. Gen, USAF		29. DATE SIGNED 23 May 68	
24. NAME AND TITLE OF SIGNOR (Type or print) R. S. MITCHELL Vice President Pan American World Airways									

SCHEDULE

PART I—STATEMENT OF WORK

The contractor shall furnish the following within the time period set forth in part II hereof:

Item 1—Description

Organization, services, supervision, and emergency supplies for the economical administration, operation, maintenance, and logistics support of the test support facilities and related activities of the Air Force Eastern Test Range (AFETR) in accordance with exhibit "A" (consisting of task orders 1 through 37), dated July 1, 1968, attached hereto and made a part of this schedule.

Note: For the purposes of this contract, the Air Force Eastern Test Range (AFETR) shall mean the existing facilities at, or hereafter furnished by the Air Force: (a) the Auxiliary Air Force Stations, Pretoria, Trinidad, Recife, Mombasa, Mahe, and satellite station sites of said test range, (b) the necessary instrumentation sites, and administrative, shop and technical space at Patrick Air Force Base required for the performance of the contract. The Auxiliary Air Force Stations shall include Cape Kennedy, Grand Bahama Island, Eleuthera, San Salvador, Mayaguana, Grand Turk, Antigua, Mayaguez, Fernando de Noronha, and Ascension. Satellite stations shall mean marine bases, instrumentation or logistic support sites administratively attached to the Auxiliary Air Force Stations and ships used in lieu of such sites. The term "related activities" includes support of the programs of: (a) the National Aeronautics and Space Administration (NASA) at various geographical locations; and (b) the Air Force Western Test Range.

Contract No. F08606-68-C-0040; Pan American World Airways, Inc.

APPENDIX 8

COVER PAGE AND SCHEDULE OF PAN-AM'S SUB-CONTRACT WITH RCA
SUBCONTRACT

between

CONTRACTOR: PAN AMERICAN WORLD AIRWAYS, INC.
Aerospace Services Division
Post Office Box 4187
Patrick Air Force Base, Florida

and

SUBCONTRACTOR: RCA CORPORATION
Cherry Hill Township
Camden, New Jersey 08034

SUBCONTRACT NO.: 72-0040-01

TYPE OF SUBCONTRACT: Cost Plus Incentive Fee
Pursuant to
Contract F08606-68-C-0040

DATE: 1 July 1971

THIS SUBCONTRACT, made as of the 1st day of July 1971, between PAN AMERICAN WORLD AIRWAYS, INC., a corporation organized and existing under the laws of the State of New York, hereinafter called "Pan American" and RCA CORPORATION, a corporation organized and existing under the laws of the State of Delaware, hereinafter called the "Subcontractor" or "RCA",

WITNESSETH THAT:

WHEREAS, Pan American has entered into Contract F08606-68-C-0040, dated 1 July 1968, with the United States Government, hereinafter referred to as the "Government", providing for the economical administration, operation and maintenance of the test support facilities and related activities of the Air Force Eastern Test Range, said contract being hereinafter referred to as the "Principal Contract"; and

WHEREAS, RCA has satisfactorily performed similar work by subcontract with Pan American under Subcontract 71-0040-01 and it is desired by the parties hereto that RCA continue to perform such work under the Principal Contract; and

WHEREAS, a continuing high degree of cooperation and mutual understanding between the contracting parties is a prerequisite to the end that the said subcontract shall be performed as economically and effectively as possible;

NOW THEREFORE, in consideration of the covenants and agreements herein contained and for other good and valuable consideration, the parties hereto do hereby agree as follows:

SCHEDULE

PART I. STATEMENT OF WORK

- A. RCA, acting under the direction of Pan American, shall furnish the necessary qualified personnel and services, and requisition through Pan American, the necessary equipment, materials and supplies for the economical operation and maintenance of assigned Air Force Eastern Test Range instrumentation and communication equipment; and shall provide support services relating to modification, installation, testing and evaluation of new instrumentation and communications systems and equipment at such times and places as may be required in support of the Air Force Eastern Test Range, and related activities thereto, all as more specifically set forth in Technical Exhibit "A" attached hereto and made a part hereof.

- B. For the purpose of this subcontract, the Air Force Eastern Test Range shall mean the existing facilities, or facilities hereafter furnished by the Air Force, at (a) the Auxiliary Air Force Stations: Cape Kennedy, Grand Bahama Island, Grand Turk Island, Ascension Island; (b) the Air Station, Antigua Island; (c) Naval Facility, Eleuthera Island, Indian Ocean Station, Mahe, Seychelles Island, Trinidad, Ramey Air Force Base, Puerto Rico; (d) Satellite sites of said test range; and (e) the necessary instrumentation sites, administrative and shop and technical space at Patrick Air Force Base required for the performance of this subcontract. Satellite sites shall mean marine bases, instrumentation or logistic support sites and ships used in lieu of such sites.

The term related activities includes support of the programs of the National Aeronautics and Space Administration (NASA) at various geographical locations and of the Air Force Western Test Range.

- C. RCA will keep complete and adequate records of its activities in the performance of the work called for herein and will furnish data and reports related thereto at such times and places as may be directed by Pan American.
- D. RCA will prepare and submit recommendations and justifications for such purposes as Financial Plans, Definitive Buying Lists, Budgets, and other planning needs as may be required by Pan American.
- E. The AFETR Planning Guidance document (classified) and Missile Program Requirements documents and instructions from Pan American as all of the above may be amended from time to time, shall be utilized as a basis for planning and programming the work required in performing this subcontract.
- F. All the technical data and reports requirements of the Government are set forth in Technical Exhibit "C", the DATA REQUIREMENTS LIST, attached hereto and made a part hereof, and in the Schedule and General Provision clauses included herein. In case of differences or conflict between the DATA REQUIREMENTS LIST and the Schedule and General Provision clauses, the latter shall govern. Nothing in any other documents or specifications made a part hereof shall be construed as altering such data and reports requirements of the Government in any way. Data requirements of Pan American are not subject to the limitations contained in the DATA REQUIREMENTS LIST.

APPENDIX 9

EXCHANGE OF LETTERS BETWEEN CHAIRMAN DIGGS AND THE DEPARTMENT OF LABOR REGARDING THE DEPARTMENT'S RESPONSES TO INQUIRIES MADE BY THE CHAIRMAN AT THE TIME OF THE DEPARTMENT'S APPEARANCE BEFORE THE SUBCOMMITTEE ON DECEMBER 6, 1971

DECEMBER 23, 1971.

HON. CHARLES C. DIGGS,
Chairman, Committee on Foreign Affairs, Subcommittee on Africa, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: During the course of my recent testimony before your subcommittee, I agreed to provide information on the International Labor Organization's definition of forced labor. That information is enclosed.

In addition, you or your staff may want to review the Report of the Committee of Experts on the Application of Conventions and Recommendations, report III (pt. IV), 48th and 52d sessions of the International Labor Conference (1962 and 1968, respectively). In these reports, the ILO's committee of experts interprets the definition of forced labor.

The other information which was requested during my testimony is being gathered and will be forwarded to you as soon as possible.

Sincerely,

DONALD M. IRWIN,
Acting Deputy Under Secretary, International Affairs.

U.S. DEPARTMENT OF LABOR,
OFFICE OF THE SECRETARY,
Washington, D.C., February 23, 1972.

HON. CHARLES C. DIGGS, Jr.,
*Chairman, Subcommittee on Africa,
House of Representatives, Washington, D.C.*

DEAR CHAIRMAN DIGGS: On December 6, 1971, Mr. Donald M. Irwin testified before your Subcommittee on Africa. Mr. Irwin was then the Department of Labor's Deputy Under Secretary for International Affairs, but since then he has been assigned other duties in the Department.

In the course of Mr. Irwin's testimony, the committee asked him to supply specific information on several points.

He was asked to provide the definition of forced labor used by the International Labor Organization. Mr. Irwin's letter to you of December 23, 1971, provided the answer to that question.

He was also asked, on page 303 of the testimony, to request the U.S. Embassy in South Africa to provide information on utilization of convicts by U.S. firms. This request, along with the transcript, was sent to South Africa and a reply has been received. We are advised that over recent years our Embassy and consulates there have no evidence indicating that convict labor has been used by American firms in South Africa. They advise that according to reliable sources, use of prisoners is restricted to farm areas and not to industry, American or other.

I believe that this completes the specific questions requiring followup action which were addressed to Mr. Irwin. At the time that Mr. Irwin testified, Mr. Douglas Wachholz, who is not associated with the Department of Labor, also testified. In connection with Mr. Wachholz' testimony, there was considerable discussion concerning goods imported into the United States from South Africa. We understand that you have addressed these questions to the Treasury Department.

Sincerely,

EDWARD B. PERSONS,
Associate Deputy Under Secretary, International Affairs.

AUGUST 7, 1972.

HON. EDWARD B. PERSONS,
Associate Deputy Under Secretary for International Affairs, Department of
Labor, Washington, D.C.

DEAR MR. PERSONS: I am writing to request the submission of statements and materials requested of the Department of Labor during the testimony of Mr. Donald W. Irwin before the subcommittee on December 6, 1971. The material we are requesting includes the following:

Pertinent provisions of other ILO Conventions carrying relevant definitions of forced labor. (Excluding article I of the ILO Convention on Forced Labor, which you have provided).

Relevant data from the ILO reports on the complaint and findings in regard to the allegation of the use of forced labor in Angola and Mozambique by Portugal. (This would relate, of course, to the ILO concept of forced labor).

A specific statement on those U.S. firms in South Africa, Angola, Mozambique and Namibia which hire their employees under a contract labor system.

A comprehensive statement on wages paid by the U.S. Government to local personnel in South Africa.

A complete statement on wages paid by U.S. Government personnel in South Africa to their personal employees.

I am enclosing copies of the pages from the transcript of that hearing on which these particular questions were put. I would appreciate an expeditious handling of this request, and a full answer to each of the questions.

Sincerely,

CHARLES C. DIGGS, Jr.
Chairman, Subcommittee on Africa.

Note: In Chairman Diggs handwriting:

Mr. Secretary, this letter is too polite. The delay in this response is obviously deliberate and unconscionable. I think an explanation is in order.

CHARLES C. DIGGS, Jr.

U.S. DEPARTMENT OF LABOR,
OFFICE OF THE SECRETARY,
Washington, D.C., August 25, 1972.

HON. CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of
Representatives, Washington, D.C.

DEAR CONGRESSMAN DIGGS: This is in response to your letter of August 7 requesting the submission of statements and materials on specific points itemized in your letter. This supplements information transmitted to you by Mr. Donald M. Irwin's letter of December 23, 1971, and my letter to you of February 23, 1972.

The following is arranged in the order of the five items in your letter.

Item 1. Mr. Irwin's letter of December 23 enclosed the definitions of forced labor contained in article 1 of the Abolition of Forced Labor Convention, 1957 (No. 105), and in article 2 of the Forced Labor Convention, 1930 (No. 29). These are again enclosed for your convenience. We have been unable to identify any other ILO Conventions which contain a definition of forced labor.

Item 2. The ILO appointed a Commission of Inquiry to examine the complaint of the Government of Ghana that Portugal was not observing the Abolition of Forced Labor Convention, 1957 (No. 105) in Mozambique, Angola and Guinea. Enclosed is ILO Official Bulletin, volume XLV, No. 2, supplement II, of April 1962 containing the report of that commission. Among the recommendations of the Commission (paragraph 788) was one that the Portuguese Government should indicate regularly in its reports to the ILO on its application of ratified ILO conventions the steps it is taking to give effect to the recommendations of the Commission of Inquiry. These reports are reviewed by the ILO Committee of Experts on the Application of Conventions, which reports its comments thereon to the ILO Conference. Thus, the subsequent reports of the Committee of Experts contained the committee's comments on those reports. Also enclosed, therefore, are the relevant excerpts from the following:

A. Report of the Committee of Experts on the Application of Conventions and Recommendations—ILO-Geneva, 1963, 47th session, report III (part IV) pages 116-118.

B. Report of the Committee of Experts on the Application of Conventions and Recommendations—ILO-Geneva, 1964, 48th session, report III (part IV) pages 152-154.

C. Report of the Committee of Experts on the Application of Conventions and Recommendations—ILO-Geneva, 1965, 49th session, report III (part IV) pages 121-123.

D. Report of the Committee of Experts on the Application of Conventions and Recommendations—ILO-Geneva, 1966, 50th session, report III (part IV) pages 118-119.

E. Report of the Committee of Experts on the Application of Conventions and Recommendations—ILO-Geneva, 1967, 51st session, report III (part IV) pages 111-115.

F. Report of the Committee of Experts on the Application of Conventions and Recommendations—ILO-Geneva, 1969, 53d session, report III (part IV) pages 120-121.

G. Report of the Committee of Experts on the Application of Conventions and Recommendations—ILO-Geneva, 1970, 54th session, report III (part IV) page 151.

H. Report of the Committee of Experts on the Application of Conventions and Recommendations—ILO-Geneva, 1971, 56th session, report III (part IV) pages 160-164; and a supplement thereto "Report on Direct Contacts with the Government of Portugal regarding the Implementation of the Abolition of Forced Labor Convention 1957 (No. 105)," which appears at the end of the book.

Item 3. As Mr. Irwin stated in his testimony, he was not optimistic that we could supply the desired information. A further check confirmed that the requested information was not available in Washington. A request, however, has been sent to the field by the Department of State to ascertain whether this information can be provided from that source. As soon as the information is received, it will be forwarded to you.

Items 4 and 5. Mr. Irwin stated in his testimony that the Labor Department did not have information on the wages paid by the U.S. Embassy in South Africa to local employees or by U.S. Government personnel to their personal employees. He agreed that if a further check of messages from South Africa revealed such information, he would insert it in the record. The requested information was not found. I understand, however, that the Department of State intends to respond to you direct concerning these two items.

I regret that you have found it necessary to write, as long as 8 months following Mr. Erwin's testimony before your subcommittee, for information on the subject matter of those hearings; and that you believe this represents an obviously deliberate and unconscionable delay on our part. In response to your request for an explanation, I wish first to assure you that there was no such intention. Mr. Irwin's letter of December 23 provided some of the information requested. My letter of February 23 provided further information. At that time we indicated our understanding that the specific requests for information addressed to Mr. Irwin had been complied with. I can only express my chagrin that, as is clear from your letter of August 7, you did not share that view. I hope that the additional enclosed information will be helpful, and that we will be able to forward information concerning item 3 in the near future.

Sincerely,

EDWARD B. PERSONS,
Associate Deputy Under Secretary, International Affairs.

U.S. DEPARTMENT OF LABOR,
OFFICE OF THE SECRETARY,
Washington, D.C., September 12, 1972.

HON. CHARLES C. DIGGS, JR.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of Representatives, Washington, D.C.

DEAR CONGRESSMAN DIGGS: In my letter to you of August 25 I mentioned that the Department of State had sent a request to the U.S. missions to ascertain any available information on item 3 in your letter to me of August 7, 1972. This item requested "A specific statement on those U.S. firms in South Africa, Angola, Mozambique and Namibia which hire their employees under a contract labor system."

Replies have now been received from the field. In the case of Angola and Mozambique, we are informed that, as far as our missions are aware, no U.S. firms use contract labor.

With respect to South Africa, the Embassy regrets that it is unable, from available information, to compile a roster of U.S. firms "employing or not employing" contract labor in South Africa and believes that "anything less would give distorted picture." It notes that until recently, contract labor was largely employed in mining and agriculture. Since 1969, the Minister of Bantu Affairs has had the authority to require African workers who are not permanent residents in white areas to return to their "homelands" each year for a 1-month vacation. These workers must register at the Homeland Labor Bureau and can return to their old employer or to a new employer under contract for 1 year. As a result of this, we understand that most companies in commerce and industry, to the extent that they employ workers who are not permanent residents of the areas where they work, now engage in this form of contract labor. There are approximately 300 U.S. firms in South Africa and the Embassy points out that some of them do employ contract labor but the number of persons so employed is believed to be relatively small. Official information, however, indicates that most firms prefer to employ Africans holding resident entitlement.

In Namibia, the Tsumeb Corp., which mines copper, lead, zinc, and other metals, employs about 5,200 Africans (Ovambos), all of whom work on 12-month contracts. The company is said to pay a 3-month bonus to all contract workers who come back within a month after their mandatory return to Ovamboland.

I hope that the foregoing will prove helpful.

Sincerely,

EDWARD B. PERSONS,
Associate Deputy Under Secretary, International Affairs.

OCTOBER 5, 1972.

Hon. EDWARD B. PERSONS,
Associate Deputy Under Secretary for International Affairs, Department of Labor, Washington, D.C.

DEAR MR. PERSONS: I refer to your letter of September 12 regarding the use of contract labor by U.S. companies in Southern Africa.

I find the Ambassador's refusal to provide available information unwarranted. Concealment of the facts about U.S. participation in the migratory labor system is most certainly not in the interests of the United States or of the majority of South Africans. If available information is incomplete, then the obvious solution is to use some ingenuity to find the necessary data to provide a complete picture. There is no reason why, with the huge staffs at our posts in South Africa and the Portuguese colonies, including so-called "commercial attachés," direct investigation cannot be undertaken. If the companies involved are uncooperative, the subcommittee should be informed of this with specifics. It is a matter of continuing concern that the Department has not carried out the on-the-ground investigation which the Department undertook to make in its appearance before the subcommittee last December.

I am very well aware that African workers are being increasingly forced into the migratory pattern. To refer to the compulsory 1-month return to the reserve as a "vacation" is, I think, a mockery. I must also question the allegation that the number of contract laborers employed by U.S. companies is "believed to be relatively small." I simply do not accept that this can be so, given the increasing compulsory use of migratory African labor in South Africa.

With regard to the Portuguese colonies, I should like to know to what extent professional recruiters are used by U.S. companies. I should also like to have your comments on the execution by the Portuguese authorities of their obligations in terms of the Abolition of Forced Labor Convention (No. 105) of 1957, in the light of the two reports of the International Labor Office on labor conditions in the colonies. I should also like to have your comments on the application of the conditions in Angola and Mozambique to those parts of Guinea-Bissau still controlled by the Portuguese.

I look forward to your prompt reply.

Sincerely,

CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa.

APPENDIX 10

**EIGHTH SPECIAL REPORT OF THE DIRECTOR-GENERAL ON THE
APPLICATION OF THE DECLARATION CONCERNING THE POLICY OF
"APARTHEID" OF THE REPUBLIC OF SOUTH AFRICA**

The designations of countries employed, which are in conformity with United Nations practice, and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the International Labour Office concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers

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INTRODUCTION

In the Declaration concerning the Policy of *Apartheid* of the Republic of South Africa, which the International Labour Conference adopted unanimously on 8 July 1964, the Governing Body was invited to request the Director-General "to follow the situation in South Africa in respect of labour matters and to submit every year for consideration by the Conference a special report concerning the application of the present Declaration including any necessary recommendations concerning any measures which should be adopted with a view to bringing to an end the policy of *apartheid* in the Republic of South Africa".

In accordance with this decision, a Special Report has been laid before each session of the International Labour Conference since 1965. The present Report is the eighth of this series.

Like its predecessors, this year's Report takes its broad terms of reference from the above-mentioned Declaration and the ILO Programme for the Elimination of *Apartheid* in Labour Matters in the Republic of South Africa, approved by the Conference in July 1964 at the same time as the Declaration.

It may be useful to recall that the ILO Programme set forth a series of practical measures for the elimination of *apartheid* in labour matters in South Africa, with particular reference to the following three broad areas: equality of opportunity in respect of admission to employment and training; freedom from forced labour (including practices which involve or may involve an element of coercion to labour); and freedom of association and the right to organise. In respect of each of these fields the Programme set out, primarily in the form of an analysis of the applicable laws and regulations, the situation as it existed in 1964, summarised the findings concerning this situation which had been made by authoritative ILO bodies and made recommendations for the amendment of the laws of South Africa so as to eliminate *apartheid*.

Such changes as have been made in the relevant legislation during the intervening period have been in the direction of a tightening of the *apartheid* system in the labour field and have in no way modified the validity of the conclusions and proposals contained in the ILO Programme.

Last year, on the occasion of the International Year for Action to Combat Racism and Racial Discrimination, the Seventh Special Report selected as its main theme the role of workers and employers, both in South Africa and at the international level, in action against *apartheid*. After finding that the ILO's decisions concerning *apartheid* had received the full support of the Employers' and Workers' groups in the Governing Body and at the International Labour Conference, and that the harmful effects of the South African Government's labour policies had been criticised inside South Africa by numerous employers and trade unionists, the Report

made a number of practical suggestions for action to counteract these policies. In particular, it suggested that measures on the part of South African employers could include encouraging the occupational advancement of African workers in their employment, devising programmes for training on the job, increasing wages, social benefits and other incentives for their African employees, and initiating practices of consultation with their African staff. The South African trade union movement could make an important contribution by measures such as: taking the initiative in collective bargaining to improve wages and working conditions of unrepresented African workers; not opposing the removal of occupational barriers so as to enable Africans to perform more responsible and skilled work; encouraging their members to train Africans for such work; campaigning in favour of the recognition of African trade unions, and helping African workers to organise themselves. If such initiatives, motivated by considerations of justice and enlightened self-interest alike, were undertaken by South African employers' and workers' organisations, the Report concluded, they could be a significant factor in developing the momentum for change within South Africa without which a peaceful solution is impossible.

The International Labour Conference again debated the problem of *apartheid* at its 56th Session, at which, on 22 June 1971, it adopted a resolution in which, considering in particular " that the International Labour Organisation, with its unique tripartite structure, through which employers and workers are associated with governments in its decision-making process and activities, has a distinctive part to play in the fight against *apartheid* ", it reaffirmed its condemnation of *apartheid* and racial discrimination.

The present Report follows previous practice in being divided into three main sections, the first of which reports on current labour developments and problems in South Africa and the second on international developments concerning *apartheid*, while the final section draws a number of general conclusions from all these developments.

Chapter I first analyses recent South African legislation concerning the administration and control of African labour. Secondly, it carries on the examination of job reservation and manpower problems from where it was left off in last year's Report. The most extensive section of this chapter is devoted to an examination of the wage disparities between the racial groups in different employment sectors, wages and the cost of living, the question of equal pay for equal work, and action taken or required to improve the wages of African workers. A final section of the chapter deals with some recent trade union developments.

Chapter II comprises two main sections, the first of which describes ILO action against *apartheid* over the past year, and in particular the resolution adopted at the 1971 Session of the Conference, and the second describes action in the United Nations concerning South Africa and Namibia.

Finally, Chapter III sets out the arguments in the economic and social fields which militate in favour of a complete change of policy in South Africa. In particular, it finds that in a context in which the future development and prosperity of South Africa will to an increasing degree come to rely on the human resources of

INTRODUCTION

all its population groups, there can be no effective job security, incomes policy, industrial relations system, employment rights or human rights in general for one class of workers, if these do not exist for all classes of workers. It also finds that there is increasing recognition of the urgent need for change inside South Africa and that it is imperative to work, with the help of the international community, towards a transformation in the interest of all groups in South Africa.

CHAPTER I

CURRENT LABOUR DEVELOPMENTS IN SOUTH AFRICA

The Seventh Special Report carried out an examination of the general labour situation in South Africa as it existed in 1970. It devoted particular attention to the problem of the industrial colour bar and found evident contradictions between the South African Government's official policy of strengthening job reservation, as expressed in the Bantu Laws Amendment Act, 1970, and industrial practice, which was obliged to take into account a manpower situation characterised by a general shortage of skilled labour.

Leaving aside recent events in Namibia (which will be touched upon briefly in the next chapter), there have been few outstanding developments and no major changes of policy direction in the labour field in the Republic of South Africa itself during the period covered by the present Report. The only significant new labour legislation which will be examined here is the Bantu Affairs Administration Act, 1971; while this Act reinforced the Government's control over the movement of African labour, it affected the administrative framework rather than the legal substance of earlier labour legislation. The present chapter will then deal with two of the major current preoccupations in South Africa, job reservation and the wage situation. As regards the former, the strains and criticisms to which the application of the policy of job reservation has given rise have continued unabated, and the following pages will report on how some of the problems mentioned in last year's Report have developed. The wage situation has been characterised by two main features: on the one hand, there has been in most cases a widening gap between the wages of White workers and those of African workers (whose earnings have not kept pace with the rising cost of living); at the same time, however, there has been a growing demand for, and some measure of recognition of the principle of, equal pay for equal work in some occupations. In this context, there has also been increasing debate, both inside and outside South Africa, concerning the responsibility of foreign firms operating in South Africa to improve the wages and conditions of employment of their non-White employees. Finally, this chapter will include some recent information concerning trade union developments in South Africa.

THE BANTU AFFAIRS ADMINISTRATION ACT, 1971

The Seventh Special Report mentioned that the South African Government was contemplating further legislation to increase its control over the residence, movement and employment of Africans, and had published a draft Bill to this effect. However,

as this Bill had not yet been debated in Parliament and was still subject to modification, that Report indicated that a fuller analysis of its provisions would be undertaken in a later report.

A revised draft of the Bill was submitted to the session of the South African Parliament which opened on 29 January 1971, and was adopted, subject to a few minor amendments, as the Bantu Affairs Administration Act, 1971 (Act No. 45 of 1971).¹ The Act came into operation on 26 November 1971 by proclamation of the State President.²

The general framework of the Act is laid down in section 2, which empowers the Minister of Bantu Administration and Development to declare, by Notice in the *Gazette*, any area outside the Bantu homelands to be a "Bantu Affairs Administration Area" with effect from such date as may be specified in the Notice. Any such area may include the area, or any portion of the area, under the jurisdiction of an urban local authority, after the local authority concerned has been consulted. The Minister may also from time to time change the boundaries of Bantu Affairs Administration Areas, again after consulting the local authorities concerned. For every such area, a Bantu Affairs Administration Board shall be established to exercise the powers and perform the functions conferred under the Act.

It is not proposed to enter into any detailed analysis of this complex legislative text, many of whose provisions deal with administrative, procedural or financial matters, but those provisions of the Act which are of direct concern to African labour will be reviewed here briefly.

First, as regards the membership of Bantu Affairs Administration Boards, section 3 (1) of the Act provides that, among the members to be designated by the Minister, one or more shall be appointed "on the ground mainly of their acquaintance with and wide knowledge of Bantu labour matters in agriculture in the board's administrative area", after consultation with the bodies which, in the Minister's opinion, are representative of persons engaged in agriculture; similarly, one or more persons are to be appointed "on the ground mainly of acquaintance with and wide knowledge of Bantu labour matters in commerce and any other industry in such administration area" after consultation with such organisations as, in the opinion of the Minister, are representative of the employers concerned. It was pointed out by one member of Parliament that the urban Bantu councils, which were the bodies most directly affected by this legislation, had not been consulted and would not be represented on these boards, and therefore "to call this a widely based board with representation of people who know all about the urban African, is to my mind sheer nonsense when the very people concerned are neither consulted, nor given representation on the board."³

Under section 11, "the object of a board is to administer within its administration area matters affecting Bantu so as to give effect to the purposes of this Act" and to

¹ *Government Gazette*, Vol. 72, No. 3127, 2 June 1971, p. 2.

² *Ibid.*, Vol. 77, No. 3313, 26 Nov. 1971, p. 1.

³ *House of Assembly Debates*, 1971, No. 5, col. 2072 (Mrs. Helen Suzman, M.P.).

that end a board shall, within its own area, be vested with, among others, all the rights, powers and duties and obligations: of an urban local authority in terms of the Bantu (Urban Areas) Consolidation Act, 1945, the Bantu Services Levy Act, 1952, the Urban Bantu Councils Act, 1961, and the Bantu Labour Act, 1964; in so far as they relate to Bantu only, of an urban local authority or a local government body or a Bantu Affairs Commissioner in terms of such laws as may from time to time be specified by the Minister by Notice in the *Gazette*; and with such rights, powers, functions, duties and obligations, in so far as they relate to Bantu only, of an urban local authority or a local government body in terms of any ordinance as the Minister may specify by Notice in the *Gazette*, after consultation with the provincial Administrator concerned.

With respect to the application of the provisions of the Bantu Labour Act, 1964¹, section 11 (6) specifies that any reference to a district labour bureau or a district labour officer within the meaning of the 1964 Act shall, with effect from a date determined by the Minister by Notice in the *Gazette*, be construed as a reference to a district labour bureau established for that board's administration area and to a district labour officer who shall be a person appointed by that board. With effect from the same date, the former district labour bureau shall cease to exist, and its powers and functions will be taken over by the new district labour bureau; likewise, the new district labour officer will exercise any power and perform any function or duty which the first-named district labour officer possessed under the 1964 Act.

Existing Bantu residential areas established under the Bantu (Urban Areas) Consolidation Act, 1945, which fall within the administration area of a board, will continue in existence and will be deemed to have been established by such board under that Act.

However, under the terms of section 22 the Bantu Affairs Administration Boards will not have the power to make regulations, which is vested only in the Minister. The Minister may make regulations concerning, *inter alia*, "the movement of Bantu labourers between different boards' administration areas and the distribution of Bantu labourers between different categories of employment in any such area" (section 22 (3) (e)). Different regulations may be made in respect of different boards' administration areas or different parts of any such area or different classes of employers of Bantu labourers, or of Bantu labourers, in any such area. However, any regulation made under section 22 (3) (e) must not be inconsistent with the Bantu Labour Act, 1964. All regulations made by the Minister must be tabled in Parliament and will lapse if disapproved.

Finally, section 26 of the Act relates to the residential rights of Africans in urban areas. When a "prescribed area" (as defined in section 1 of the Bantu (Urban Areas) Consolidation Act, 1945) is included in the administration area of a board, any African who under the existing law is qualified to remain there for more than seventy-two hours, or who becomes so qualified subsequent to the date of transfer of

¹The Bantu Labour Act, 1964, has been published in the ILO *Legislative Series* (L.S. 1964—S.A. 1) and was analysed in detail in the Special Report, 1965.

control of the area, will, as long as he remains qualified, also be qualified to reside and work in any other prescribed area included in the new administrative area. If he does so, he will not lose his right to remain in the area where he originally acquired residential rights. However, if he loses his right under the 1945 Act to remain in one of the prescribed areas concerned, he will also lose such right in respect of any other prescribed area in the board's administrative area.

In presenting the Act in Parliament, the Deputy Minister of Bantu Administration and Development claimed that this measure was "intended to achieve increased efficiency, to streamline the administration of Bantu affairs and to introduce greater mobility of labour in the White areas".¹ The greater mobility of labour would result notably from the establishment of larger administrative areas, encompassing several "prescribed areas", so that an African worker eligible at present to work in one prescribed area would become entitled, without having to follow cumbersome procedures, to work within any other prescribed area within the region of the board. While agreeing with the need for greater mobility of labour, the parliamentary opposition opposed the adoption of the Act on the grounds that it removed the administration of the urban Bantu laws from the local authorities where it properly belonged and gave "dictatorial and unwarranted powers to the Minister to control the employment and the very lives of the Bantu outside the homelands".²

In reply to questions concerning the acquired residential rights which certain Africans possess under section 10 (1) of the Bantu (Urban Areas) Consolidation Act, 1945, the Deputy Minister indicated that in the absence of any express amendment to section 10 (1) the position remained unchanged. He gave the assurance that "we shall not try to shy away from section 10 in any other way than to go candidly and openly to the Bantu and then come to the House to remove section 10 when we deem the time for that to be necessary . . .".³ However, at a later stage in the debate, the Minister of Bantu Administration and Development emphasised that section 10 of the Urban Areas Act "does not confer rights of citizenship, but only grants general exemption from influx control". All Africans were in White areas "in a casual capacity". He said further that "all the opportunities for work in the White area of South Africa are the sole right of the Whites. In so far as the Whites are not in a position to exercise that sole right at all times, we have the statutory machinery under which categories of labour are released for occupation by the Bantu".

From statements of this kind, it is clear that the Government views the acquired rights of Africans under section 10 of the Urban Areas Act as an obstacle to the full implementation of its policy of "separate development", under which Africans will be deprived of any permanent rights to live and work in the so-called "White areas". However, in the meanwhile, the Bantu Affairs Administration Act maintains the *status quo* in this respect, while allowing for some degree of greater flexibility in the movement of African labour within the new enlarged administration areas. What the

¹ *House of Assembly Debates*, 1971, No. 5, col. 1970.

² *Ibid.*, cols. 2044-5.

³ *Ibid.*, No. 9, col. 3909.

Act does represent is a further step towards the centralisation in the hands of the Minister of Bantu Administration Development, his officials and the boards appointed by him, of all powers relating to Africans living and working on the "White areas".

JOB RESERVATION AND LABOUR SHORTAGES

Considerable space was devoted in the preceding two Special Reports to a discussion of the implications of the Bantu Laws Amendment Act, 1970, which gave the Minister of Bantu Administration and Development virtually unlimited powers to prohibit the employment or continued employment of a Bantu in any specified area, class of employment or trade, or in the service of any specified employer or class of employers. It was, in particular, recalled in last year's Report that the Deputy Minister had issued two Notices announcing the Government's intention of prohibiting the performance of work by Africans in a number of occupations (mainly of a clerical or service character), and that this had evoked widespread protest among employers in the country. This prohibition was, however, not to become effective until a final Notice was issued.

Replying to a parliamentary question as to whether any representations had been received in regard to the proposed prohibition of Africans in certain classes of work contained in the second Government Notice of 7 August 1970, and how many of these representations were opposed to the proposed prohibitions, the Minister of Bantu Administration and Development indicated on 17 February 1971 that he had received directly representations from various bodies—including the Federated Chambers of Industries, the Building Industries Federation, the Commercial Employers' Associations, and the Federated Hotel Associations of South Africa—with which he was still negotiating, and that "generally the representations reveal a spirit of co-operation and responsibility in connection with the principles of the proposed action".¹ However, it would appear that in view of the clear opposition of many employers, whose services would be seriously disrupted by the proposed prohibition, the Government has for the time being decided to defer the enforcement of this measure, since no final Notice to this effect was published during 1971. Nevertheless, the measure remains a potential threat suspended over the heads of employers and their African labour force.

A further job reservation determination was proclaimed last year by the Minister of Labour under section 77 of the Industrial Conciliation Act, 1956. This was determination No. 27, issued on 12 November 1971, which reserved for White persons work connected with sampling, surveying and ventilation on any mine in the Republic of South Africa, excluding the Bantu homelands and areas.² It was subsequently reported that the mining industry regarded this determination as a double-edged ruling. While the Government's acceptance of the fact that these occupations would not be reserved for Whites on mines in the Bantu homelands was

¹ *House of Assembly Debates*, 1971, No. 3, col. 230.

² *Government Gazette*, Vol. 77, 12 Nov. 1971, No. 3307, p. 1.

welcome, the determination was regarded as being retrogressive in so far as it affected "White areas", since some of the jobs concerned had been done by African mineworkers for more than ten years.¹

However, the factual situation has continued to be characterised by a chronic shortage of skilled labour throughout the South African economy. As a result, demands by employers for a relaxation of the statutory restrictions placed on a more productive use of non-White labour have become increasingly pressing, and the Government has in certain cases had to grant exemptions on a wide scale from job reservation determinations. A few examples drawn from different sectors of activity will suffice to illustrate the position.

The first example is taken from mining. In his report to the 81st Annual General Meeting of the Chamber of Mines of South Africa, Dr. von Maltitz, President of the Chamber, pointed to a persistent shortage of White labour in the mining industry, which was part of a wider problem, "the inability of the White population to provide qualified men at the rate demanded by the growth of the economy". In order to solve this problem, he advocated that the policy of job reservation be reviewed so as to allow a greater use of non-White labour. On the mines, work allocation was not governed by job reservation as such but by the Mines and Works Act, 1956. "Custom and traditional practice is often the only reason that remains for the present division of labour between White and non-White. In the light of all the circumstances facing us we would now ask the White mineworker to take a step or two up the ladder of responsibility and allow the non-White to do the same". The industry had offered to guarantee the unions that no White miners would be retrenched as a result, and both White and non-White employees would stand to benefit from the increased productivity that would result.² A similar appeal was made a few days later by Mr. W. B. Coetzer, Chairman of the Federale Mynbou Beperk, who advocated a more rational use of African labour to alleviate the shortage of White underground personnel. "A precondition for such a scheme of rationalisation would however be to elevate it from purely the area of employer-employee relationships and to obtain firm Government guidance towards its implementation as soon as possible."³

A survey carried out by the Steel and Engineering Industries Federation of South Africa (SEIFSA) in May 1971 showed that the shortage of skilled as well as operator labour had hampered production in large sectors of the steel and engineering industry. As a result, thousands of workers in the industry had had to work considerable hours of overtime to overcome the shortage of skilled labour.³

During the debate on the labour appropriation, a Nationalist member of Parliament, Mr. Henning, mentioned that, as a result of the shortage of manpower in the engineering and manufacturing industries, a practice had developed for certain enterprises to act as "labour brokers" for supplying artisans. Mr. Henning claimed

¹ South African Institute of Race Relations: *Survey of Race Relations in South Africa, 1971* (Johannesburg, 1972), p. 231.

² *The Star*, Johannesburg, 22 June 1971.

³ *Ibid.*, 24 June 1971.

that, whereas the average wage of an artisan in the Vaal Triangle was about R.1.35 per hour¹, the brokers were enticing workers away from their employers by paying them R.1.80 per hour and then hiring them out again to other employers at rates varying from R.2.35 to R.3.50 per hour. According to him, there were no fewer than nine such labour brokers in the Vaal Triangle, as well as several on the Witwatersrand.² Following this intervention, the Minister of Labour ordered an investigation into this matter. A senior official of the Department of Labour was later reported to have said that these organisations were making huge profits, and that there were at least a dozen in Durban, fifty on the Witwatersrand and nine in the Vaal Triangle.³

Addressing the South African Institute of Management towards the end of 1971, Mr. A. J. M. de Vries, head of the Bureau for Economic Research at the University of Stellenbosch, quoted manpower surveys indicating that in the second half of 1970 there were 35,000 jobs vacant in commerce and 63,000 in industry. The labour shortage and the consequent pressure on wages and salaries was a major reason for inflation. Mr. de Vries concluded that adjustments in the present labour policy were essential.⁴

As regards the future evolution of the situation, Dr. C. H. Wyndham, Director of the Human Sciences Laboratory of the Chamber of Mines, was reported to have forecast at the 69th Annual Congress of the South African Association for the Advancement of Science in July 1971, that 3.5 million people would be required by 1980 in the "skilled occupations", i.e. professional, technical and administrative posts, clerical and sales, and skilled industrial work. As there would be, at the most, 1.5 million Whites available for these posts, 50 per cent of the skilled jobs would have to be filled by non-Whites.⁵

Against this background, it is not surprising that employers have continually applied for exemptions from work reservation determinations, and that such applications have in the great majority of cases been granted, in view of the inability to find enough White workers for the jobs concerned. On 2 April 1971 the Minister of Labour provided, in answer to a question, detailed statistics (see table I) concerning exemptions from job reservation determinations for the two-year period 1969-70 (specifying that the great majority of applications were for renewal of exemptions previously granted).

The heaviest pressure for a relaxation of job reservation appears to have been in the building industry. It was reported briefly in last year's report that the Minister of Labour had in February 1971 announced the decision to relax job reservation in the industry by allowing the employment of Coloured workers as plasterers and bricklayers in the Witwatersrand and Pretoria areas. This decision had met with an extremely hostile reaction from the White Building Workers' Union, whose secretary,

¹ One South African rand (R.) is approximately equivalent to US\$1.40.

² *House of Assembly Debates*, 1971, No. 15 col. 6912.

³ *Survey of Race Relations*, 1971, p. 195.

⁴ Quoted by Mr. S. M. Stoyne, M.P., *House of Assembly Debates*, 1971, No. 15, col. 6902.

⁵ *Survey of Race Relations*, op. cit., p. 196.

EIGHTH SPECIAL REPORT ON "APARTHEID"

TABLE I. EXEMPTIONS FROM JOB RESERVATION DETERMINATIONS, 1969-70

Determination No.	Industry	Applications received	Applications granted	Number of persons affected		
				Coloured	Asian	African
3	Iron, steel, engineering and metallurgical industries (certain work)	At the request of the employers and trade unions, suspended for the currency of the industrial agreement—no figures given				
4	Municipal undertaking (Cape Town)	1	1	20	—	—
5	Passenger lift attendant (Bloemfontein, Johannesburg, Pretoria)	3	3	6	—	1
6	Building industry (Transvaal and Orange Free State urban areas)	225	191	769	—	10
7	Iron, steel, engineering and metallurgical industries (certain activities)	At the request of the employers and trade unions, suspended for the currency of the industrial agreement—no figures given				
8	Clothing industry	8	6	—	—	316
10	Road passenger transport (Cape Peninsula)	3	3	460	—	—
11	Motor vehicle driving (certain industries, Orange Free State)	2	2	—	—	16
12	Abattoirs and meat trade (Witwatersrand and Pretoria)	6	6	—	—	145
13	Building industry (Cape Province and Natal)	187	187	339	19	1
(In addition, exemption granted in Durban, Inanda, and Pinetown for 500 Coloured and Asians)						
14	Barmen (Pietermaritzburg and Durban)	110	110	—	116	—
15	Motor vehicle driving (Durban)	25	25	8	102	14
16	Motor assembly industry	5	4	Numbers not known because total exemption was granted to three employers in Port Elizabeth and Uitenhage		
17	Liquor and catering trade (Western Cape and Natal)	72	68	—	—	245
19	Driving of motor vehicles, road construction machines and earthmoving machines (Transvaal, Orange Free State and Natal)	6	6	1	16	30
20	Furniture industry	3	3	10	—	1
21	Motor vehicle driving (certain industries, Transvaal and Orange Free State)	74	72	461 non-Whites (mainly Africans)		
22	Motor vehicle driving (Union Liquid Air Company)	4	4	7	4	—
23	Barmen (Western Cape)	3	2	1	2	—
24	Barmen (East London)	7	4	1	4	—
25	Motor vehicle driving (Port Elizabeth)	3	3	9	—	—

Mr. Gert Beetge, had threatened that the White building workers would go on strike if this decision was implemented; but in the event this threat did not materialise. The Minister of Labour later informed the House of Assembly on 20 April 1971, in reply to a question by Mrs. Suzman, that 22 employers on the Witwatersrand had applied for permits to employ 292 Coloured persons as bricklayers and plasterers, and 3 employers in Pretoria had applied for similar permits for 48 Coloured workers, since 9 February 1971 (the date of the Minister's announcement).¹

Several Government Notices were issued during 1971, granting general exemptions in respect of certain categories of work in the building industry for certain classes of persons: Notice No. R 658 of 28 April from job reservation determination No. 13, for Coloured persons in Port Elizabeth; No. R 1045 of 18 June, from determination No. 6, for non-Whites in the Transvaal; No. R 1256 of 23 July, from determination No. 13, for non-Whites in Durban; No. R 1516 of 3 September, from determination No. 13, for non-Whites in the Natal Midlands. All these exemptions carried the promise that no White would be replaced by a non-White person.²

In reply to a question, the Minister of Labour informed the House of Assembly on 8 June 1971 that fifteen employers in the "White areas" of Empangeni and Richard's Bay (both in Natal) had applied for, and been granted, exemptions to employ African workers on bricklaying, plastering, carpentry, plumbing and painting work. The building industry was not subject to any minimum wage regulation in the areas in question.³ Shortly afterwards, a trade union official commented that at Empangeni local builders were paying African bricklayers 25 to 35 cents an hour, whereas Whites would receive a wage of R.1.50 to R.2 an hour.⁴

It would appear, in addition, that some employers do not hesitate to use African labour clandestinely on work which is officially reserved for Whites. For example, in June of last year, a director and a foreman of a company were convicted in Pretoria magistrate's court for contravening a job reservation determination by employing two unskilled Africans on painting work. The workers were paid R.19.42 less than the stipulated wage for White painters. The court fined the two White men, and ordered the company to pay R.19.42 to the Department of Labour within a month.⁵

These examples taken from the building industry are particularly striking illustrations of the strains to which labour policies have been subjected on account of the shortage of skilled labour, but the picture is similar in many other sectors of the economy. In certain public services, notably, it has been possible to maintain the level of staff required to provide adequate service to the public only by making considerable adjustments to the policy of job reservation. Thus, according to information provided by the Minister of Transport on 9 February 1971, 15,355 posts for railworkers, which were previously temporarily filled by non-Whites, were transferred to the establishment for non-Whites on a permanent basis with effect from 16 Decem-

¹ *House of Assembly Debates*, 1971, No. 11, cols. 732-3.

² *Survey of Race Relations*, op. cit., pp. 233-4.

³ *House of Assembly Debates*, 1971, No. 18, col. 980.

⁴ *The Star*, 10 June 1971.

⁵ *Ibid.*, 24 June 1971.

ber 1970 and were therefore no longer classified as White positions. In addition, there were 141 Coloured, 79 Indian and 1,296 African workers temporarily employed on work reserved for White graded staff in the railways and harbours service.¹ The Minister of Posts and Telegraphs informed the House of Assembly on 11 February 1971 that 721 Coloured, 243 Asian and 1,023 African persons were temporarily employed as postmen and messengers in "White areas" in posts normally occupied by White staff. Sixty-three Coloureds, 12 Asians and 254 Africans were employed in their own areas in the following posts senior to those of postmen: postmaster grades III and IV, superintendent, clerk, radio licence examiner, overseer; senior postman and senior telephonist.² It was reported in August that the Minister had indicated that fewer than half of more than 3,000 posts for White postmen were actually filled by Whites.³

It would, however, be unwise to conclude from all these developments that there has been any real breakthrough towards the elimination of the colour bar in employment. The Government has time and time again emphasised that it has no intention of abolishing job reservation which, in the words of the Minister of Labour, "constitutes the statutory pedestal of our whole traditional labour pattern in South Africa".⁴ In addition, a large section of White opinion, including some of the trade unions, is strenuously opposed to any steps which would threaten to undermine the entrenched position of White workers in South Africa. What is happening is that, faced with the growing shortage of manpower which has been described above, South African employers are having to make a number of practical adjustments, to keep the wheels of the economy turning by a more productive use of non-White labour.⁵ In some cases, as in recent industrial agreements in the engineering industry, skilled jobs have been fragmented in order to enable African workers to perform them at lower wages. In other cases, exemptions have been granted to allow jobs previously classified as "White" to be performed by non-White workers, usually under conditions such as that no White worker may be replaced by a non-White worker and that no non-White worker may be placed in any senior or supervisory capacity in relation to a White worker. Besides, the Government possesses extensive powers, both under the Industrial Conciliation Act, 1956, and the Bantu Labour Act, 1964 (as amended by the Bantu Laws Amendment Act, 1970) to intervene at any time if it considers that developments are moving too fast towards economic integration of the races. While it may therefore be forecast that the level at which the colour bar operates will move steadily upwards, the colour bar will be maintained as part of the official policy

¹ *House of Assembly Debates*, 1971, No. 2, cols. 108-9.

² *Ibid.*, col. 138.

³ *Survey of Race Relations*, op. cit., p. 245.

⁴ *House of Assembly Debates*, 1971, No. 15, col. 7001.

⁵ When the present report was going to press, it was announced by the Minister of Finance in his Budget speech on 29 March 1972 that the Government was prepared to permit greater use of African labour in urban industries, particularly those producing for export. The Minister added that private employers could make their contribution by obtaining the co-operation of trade unions for reclassification of work categories so as to permit more effective use of both skilled and unskilled workers, and by in-service training of African labour (*The Star*, 30 Mar. 1972).

to ensure that the Whites continue in exclusive occupation of the top of the labour pyramid in the "White areas" of South Africa.

Nevertheless, the view is gaining ground among some South African economists, employers and trade unionists that the legal colour bars on the employment of non-White workers, apart from being morally unjust, no longer have any economic justification at the present time. This view was forcefully stated by Mr. W. F. J. Steenkamp, a leading South African economist and former Chairman of the Wage Board, in an address delivered at Cape Town on 29 April 1971.¹ The speaker pointed out that, instead of protecting the economic interests of the different races, "work reservation and other similar curbs, far from rewarding merit, protect the members of one race against the efficiency of members of another race". There was no economic sense in maintaining legal colour bars in the seventies, since the economy had entered a decade of acute shortages of skills and there was no cause for Whites to fear losing their jobs. Mr. Steenkamp concluded as follows:

The time has come, we must conclude, to withdraw our discriminatory labour legislation. It no longer seems to serve a useful purpose. On the contrary, it is fast becoming a threat to progress in economic terms. . . . The first step can and should be an immediate withdrawal of all occupational restrictions on Coloureds and Asiatics. The abolition of those on Blacks can be initiated by the granting of wide exemptions, not of a temporary, but of a permanent nature, the total withdrawal of legal curbs to follow well before the close of this decade. If necessary, the degree of relaxation could, in the industries subject to collective bargaining, be governed by arrangements concluded between organisations of employers and employees, provided both parties accepted the withdrawal plan.

THE WAGE SITUATION

"The distribution of income in South Africa is highly unequal. There is probably not another country in the world where it is quite so unequal. It is a distinctly unusual case. Africans constitute 68 per cent of the population and receive less than 20 per cent of all income. Whites account for less than 19 per cent of the population and receive 74 per cent of total income."²

It would be hard to dispute the basic truth of this statement. All the information available concerning the income of the different racial groups in South Africa confirms that there exists an enormous, and in many cases, widening gap between the earnings of Africans (and to a lesser extent of Coloureds and Asians) and those of Whites. From statistics relating to the average monthly cash earnings in various economic sectors at specified dates in 1970 or 1971, it can be calculated that the ratio of African to White wages was, for example, slightly over 1:4 in banks and building societies, just under 1:6 in manufacturing and the railways, over 1:6 in construction and central government services, about 1:7 in electricity, and 1:20 in mining (where, however, Africans receive free accommodation and rations). There are, of course, several reasons for the enormous disparity between African and White wages. One of these is the absence of any statutory minimum wage legislation, which results in

¹ Published in the *South African Journal of Economics*, Vol. 40, No. 2, June 1971.

² Sean Gervasi: "Poverty, Apartheid and Economic Growth", in *Objective: Justice*, Vol. 3, No. 4, Oct./Nov./Dec. 1971 (New York, United Nations).

African wages being largely determined by market conditions of supply and demand. In addition, income differences correspond to the relative bargaining position and rights of different groups; African workers are placed in an unequal position not only because they have generally not been able to acquire specialised skills but because they have no collective bargaining rights under industrial legislation. But the most important factor is the industrial colour bar, which prevents African workers from advancing to the higher-paid skilled and technical occupations. Another effect of the colour bar is that, by creating an artificial scarcity of skilled labour, it places an excessively high premium on the skilled manpower available, which accounts to a large extent for the unusually wide differential between skilled and non-skilled wages in South Africa. Finally, it must also be noted that, even in cases where Africans and Whites perform similar work (such as in the medical and teaching professions), official policy up to date has maintained a difference between the earnings of the various racial groups.

Within this context, the present report will briefly examine the following questions. First, what are the average monthly wages of the different racial groups in the main sectors of the South African economy? Second, to what extent has the gap between White and African wages tended to widen or to narrow recently? In particular, how have African wages kept pace with the rising cost of living? What steps are being taken to improve wages and conditions of employment of Africans? What efforts are being made to promote the principle of equal pay in occupations where White and non-Whites perform equivalent work? With regard to the last two questions, some mention will also be made of the extensive debate which is taking place at present concerning the responsibility of foreign firms operating in South Africa.

Table II, which was compiled by the South African Institute of Race Relations from statistics published by the South African Department of Statistics, gives a comparative indication of the average monthly earnings in certain sectors of mining, industry and public services of Whites, Coloureds, Asians and Africans for the twelve months of 1969 and the last quarter of 1970, respectively, together with an indication of the percentage increase for each group.¹

The figures in the table relate to the average monthly earnings over each sector as a whole. There are, of course, wide fluctuations, according to the occupation or geographical area, within each sector (as laid down in the industrial agreements or wage determinations concerned). Thus, in the manufacturing industry, according to data published by the Department of Statistics in September 1971, the best African salaries were those of the printing workers, with an average of R.83 a month, followed by the paper products industry workers at R.68, and the electrical machinery workers at about R.63 a month. The lowest-paid African workers were those in the wood and cork industry, receiving an average of just over R.30 a month, and the next lowest were those in food and textiles at R.42 and R.43. The best-paid Coloured workers were the basic metal workers, earning about R.136 a month, followed by the printers, at about R.106 a month, and the furniture industry workers at R.99 a

¹ *Race Relations News*, Vol. 33, July 1971.

CURRENT LABOUR DEVELOPMENTS IN SOUTH AFRICA

TABLE II. AVERAGE MONTHLY CASH EARNINGS BY RACIAL GROUPS

	Rands		Percentage increase 1969/70
	1969	1970	
<i>Mining :</i>			
White	316	360.8	14
Coloured	62	75.2	21
Asian	78	98.9	27
African	18	18.3	1
<i>Manufacturing :</i>			
White	278	307.2	10
Coloured	65	73.6	14
Asian	67	77.4	15
African	48	52.3	8
<i>Construction :</i>			
White	294	325.3	11
Coloured	107	109.6	3
Asian	143	150.4	5
African	48	49.9	4
<i>Electricity :</i>			
White	299	369.1	23
Coloured	47	76.7	43
African	51	55.3	8
<i>Banks and Building Societies :</i>			
White	219	298.2	36
Coloured	61	80.4	31
Asian	83	106.8	29
African	55	66.9	22
<i>Central Government :</i>			
White	225	282.1	25
Coloured	96	114.3	19
Asian	136	114.7	15
African	41	44.8	10
<i>Provincial Administration :</i>			
White	221	224.3	10
Coloured	47	59.2	26
Asian	70	73.5	4
African	33	35.9	9
<i>Local Authorities :</i>			
White	258	293.6	14
Coloured	80	85.9	8
Asian	59	60.2	1
African	42	45.0	7
<i>S.A. Railways ¹:</i>			
White	—	295.3	—
Coloured	—	70.6	—
Asian	—	53.8	—
African	—	52.3	—

¹ No figures given for 1969, but the average cash earnings at the end of 1968 were: Whites, R.241; Coloureds, R.61; Asians, R.47; Africans, R.45 (author's note).

month, while the lowest-paid were those in the wood and cork industry, at about R.55 a month. Asian wages ranged between R.55 in the clothing industry (where the largest number of Asians in manufacturing are employed) and R.138 in the printing industry. Generally, the wages of Asians in industry were somewhat higher than those of Coloured workers.¹

The same data showed that, in commerce, Whites in the wholesale trade were paid more than five times as much as Africans, and in the retail trade (where a greater number of junior Whites are employed) about three-and-a-half times as much. The quarterly figures published by the Department of Statistics indicated that the average monthly earnings of Whites in the wholesale trade were around R.285, those of Asians R.110, Coloureds R.77, and Africans R.53. The corresponding figures for the retail trade were: Whites, R.154; Asians, R.91; Coloureds, R.60; and Africans, R.43.¹

It is almost impossible to obtain any clear picture in two important areas of African labour, domestic service and agricultural labour. In any case, no comparative assessment can be made in these two areas, since in both cases the labour force is overwhelmingly non-White: in domestic service, mainly African and Coloured female labour; in agriculture, predominantly African labour, except in the Western Cape, where the labour is mainly Coloured, and in parts of Natal, where many plantation workers are Asian. Another difficulty is that these two sectors are completely unorganised and therefore not covered by industrial agreements (and domestic service also falls outside the scope of any wage determinations). It is therefore only possible to quote a few random examples. It was reported in October 1971 that, according to a sample survey of 2,000 White housewives in the Republic, 70 per cent paid a servant about R.17 per month cash, while 21 per cent paid R.20 or more.² Servants living-in receive in addition certain benefits in kind; in October 1968 (the date at which the Department of Statistics published a survey of domestic wages), the value of payments in kind was estimated at R.22.78 for a Coloured woman in Cape Town and R.18.13 for an African woman in Johannesburg. In a study entitled "She needs you... You need her", published in 1970 by a "group of concerned Christians", it was suggested that domestic servants should be paid a minimum wage of R.35, and even this was no longer adequate after recent price increases.³

Some idea of conditions in agriculture can be obtained from a report on African farm labour on White farms in the Boland (Cape Province), which appeared in the press in July 1971.⁴ It mentioned that the Hexrivier Boeregroep, the largest farmers' association in the Boland, had been awarded a licence by the National Transport Commission to ferry thousands of Africans from the Bantu homelands to work on the farms of their members. At the end of a year's contract, the contract labourers would be returned to the homelands at the expense of the farmer (which, under a new truck service, would be reduced to about R.8 per head). One of the objects of the

¹ *The Star*, 25 Sep. 1971.

² *Ibid.*, 5 Oct. 1971.

³ *Race Relations News*, May 1971.

⁴ *The Star*, 24 July 1971.

new scheme was to prevent the desertion of farm labourers, since in the past about 20 per cent of the labourers had deserted after discovering the conditions on the farms and comparing their wages with those offered by industry. Some of the labourers were teenagers, the youngest being 14 years old. Under their contracts, the labourers received R.5 for a 5½ day week and free accommodation, but they did not receive rations, sick leave, sick pay or any other fringe benefit, and they were expected to work in summer from 5 a.m. to 7 p.m. Deserters were liable to imprisonment and had to complete their contracts after release from jail.

An analysis of wage movements over the last few years bears out the fact that, although African wages have been moving slowly upwards in absolute terms, the gap between White and African wages has been widening rather than narrowing (on the other hand, the gap between White and Coloured and Asian wages in certain sectors, notably mining and manufacturing, has tended to diminish). This trend is particularly evident in the mines. Prof. Marcus Arkin, Professor of Economics at Rhodes University, comparing the earnings of African mineworkers in 1970 with the rates being paid on the Witwatersrand gold mines in 1944, has found that during the intervening twenty-six years the Black/White wage ratio had increased from 1:10 to 1:21. An argument put forward by the mining companies to justify the low wages paid to African miners was that if average wages were to be raised from 61 cents to R.1 per shift about twenty marginal gold mines would have to close, causing some 85,000 African and 8,000 White miners to lose their jobs. However, as Prof. Arkin pointed out, 20,000 White mineworkers received in April 1970 an increase of 4.4 per cent on standard rates of pay (amounting to R.4 million), as well as improved medical benefit allowances and sick leave provisions, and this increase did not force closure of marginal mines.¹

At the same time, the cost of living has risen sharply. It has recently been reported that, according to price indices published by the Department of Statistics for December 1971, the cost of living had increased by 7.1 per cent since December 1970. The biggest price increase, amounting to 25 per cent, was in communications, while food was 6.3 per cent dearer than in 1970.² The non-White population has been the most adversely affected by these price increases. Increases in railway and bus fares have been particularly hard on thousands of African and Coloured workers, who have to commute long distances every day from their townships to their places of work. An increase in bus fares even resulted in serious disturbances in March 1971 in the Coloured township of Gelvandale (near Port Elizabeth), in which twenty-three civilians and twenty policemen were injured.

Calculations have been made by social scientists and various municipal and other bodies of the minimum budgets necessary to maintain African families in different areas of South Africa. For example, the South African Institute of Race Relations has estimated ³ that, if a study which it had carried out in 1966 on this subject were to

¹ *Race Relations News*, Aug. 1971.

² *The Star*, 5 Feb. 1972.

³ *Survey of Race Relations*, op. cit., p. 177.

be up-dated against current consumer price indices, the poverty datum line for an African family of five persons in Soweto (the African township of Johannesburg) would be R.67.13. The poverty datum line is the bare minimum necessary for subsistence, and omits many items which are normally considered essential, such as furniture, travel other than to and from work, school books, medical expenses or any luxuries (such as cigarettes). The Institute calculated the minimum effective level for an African family of five in Soweto to be R.100.69. The municipality of Johannesburg has estimated that only some 29 to 32 per cent of Soweto residents earned more than R.60 per month, while some 14 to 22 per cent earned less than R.40 per month.¹ Since, even on the assumption that the wife or other members of the family may work, the main wage earner usually accounts for at least two-thirds of the family income, the conclusion emerges that a majority of Soweto residents experience some degree of poverty and quite a few Africans even have difficulty in supporting their family at subsistence level. At a meeting between members of the Soweto Urban Bantu Council and delegates of, among others, the Chamber of Commerce, the Chamber of Industries and the Johannesburg Municipality, the Urban Councillors presented a carefully-reasoned case for a minimum monthly wage of R.100 for every male African worker.²

In the light of the general situation described so far, what steps are being taken with a view to improving African wages? There is in any case an increasing awareness of the urgent need to do so. Already for some time, as described in earlier Special Reports, some action has been taken to this effect by employers who subscribe to the aims of the Bantu Wage and Productivity Association, created by a few employers in 1959 as a pressure group to raise African wages. But there has lately been a much larger momentum in this direction, partly spurred by outside pressure on large foreign corporations operating in South Africa. The South African Government itself, conscious of the resentment which the enormous disparity between White and non-White incomes is building up, has lately called on employers to improve wages and announced steps to close the pay gap in the public services.

Among the examples reported to have been set by South African employers, a brewery company announced towards the end of 1971 that it had increased the wages of 1,700 African employees in the Transvaal, Orange Free State and Northern Cape by 10 per cent to encourage greater productivity and help meet the rising cost of living; as a result 60 per cent of the African staff would earn from R.48 to R.80 a month, while 25 per cent would earn from R.120 to R.140 a month.³ In September 1971, the Chairman of a sales company claimed that hundreds of Indians, Coloureds and Africans employed by the company as salesmen, stock checkers and branch managers received the same salaries as Whites. The minimum monthly salary for non-White clerks was R.150, while top clerks were earning R.320 a month. At about the same time, the chairman and managing director of a chain store company

¹ *Survey of Race Relations*, op. cit., p. 179.

² *Ibid.*, p. 180.

³ *Race Relations News*, [Nov. 1971.

claimed that over 1,000 non-Whites were employed by his company in positions equivalent to those of Whites. He said that all salesmen and clerical staff were covered by the same wage determination and earned equal pay.¹

A lead in the direction of equal pay was recently taken by two large banks. At the beginning of September 1971, the Standard Bank and Barclays Bank both announced that African, Coloured and Asian employees would receive equal pay with Whites in similar jobs. The head office manager of Barclays Bank stated that this decision applied only to non-White clerical staff, affecting about 200 employees. It was estimated that a similar number would receive pay rises at the Standard Bank. This meant that sub-accountants would receive about R.400 a month. Both banks employ non-Whites as tellers and clerks in predominantly non-White areas. This move was welcomed by the general secretary of the two banking trade unions, the (White) South African Society of Bank Officials (SASBO) and the (Coloured and Asian) National Union of Bank Employees.²

In the course of the past year, a number of American firms with branches in South Africa were reported to have approached the United States Consulate-General in Johannesburg with inquiries concerning how they could respond to pressures on the parent companies in the United States by improving working conditions of non-White workers. The advice given included: introducing equal hiring practices, applying equal pay for equal work and admitting non-White workers to membership of pension and medical funds.³ The South African Institute of Race Relations carried out in April 1971 a survey of American investment in South Africa. The survey found that, although several firms did pay wages in excess of the minimum laid down by wage determinations, there still remained much to be done and made a number of suggestions. The survey suggested, *inter alia*, that African wages should take into account the minimum effective level necessary to ensure that African workers and their families could live adequately, that no worker should be employed at a wage which would disqualify him from contributing to the Unemployment Fund, and that benefit funds should be extended to all groups of employees.⁴

In August 1971, United States Congressman Charles Diggs, Chairman of the House of Representatives Foreign Affairs Sub-Committee on Africa, paid a nine-day fact-finding visit to South Africa. At the end of his visit, he stated that he had found an appalling amount of racial injustice, and was critical of the attitudes of American firms in South Africa.⁵ On his return to the United States, Congressman Diggs proposed in a statement to the House Sub-Committee that the United States Government use its power and influence to make United States firms in South Africa provide equal pay for equal work, provide training and whatever else was necessary to ensure that Africans, Coloureds and Whites performed equal work on a substantial scale and, in general, to establish fair employment practices and to refuse to adhere

¹ *The Star*, 4 Sep. 1971.

² *Ibid.*

³ *Ibid.*, 9 Sep. 1971.

⁴ *Race Relations News*, May 1971.

⁵ *Survey of Race Relations*, *op. cit.*, pp. 71-109.

to racial policies and practices. He also recommended that United States Executive Order No. 10925 be amended so that United States firms operating in South Africa be required to apply fair employment practices in their South African enterprises as a condition for their eligibility for United States government contracts.

Following a decision which was reported in Chapter III of the Seventh Special Report, the Polaroid Corporation took action through its distributors in South Africa to raise the wages of their non-White employees, to introduce new benefit schemes, and to train these employees for more advanced work. In addition, it established a trust fund of R.35,000 to provide educational bursaries for non-White students, mainly Africans.¹ At the beginning of 1972, it was reported in the press that the American-owned Coca-Cola Company was employing Indians and Africans as driver-salesmen on White wages with commission, partly because the firm had found that several non-Whites were better than White applicants for these positions. The decision to upgrade the African employees had been taken as a result of discussions in the United States and of advice given by a leading South African Black trade unionist, Mrs. Lucy Mvubelo.²

During the course of the year, certain Government ministers made statements which appeared to indicate that the Government was moving towards a recognition of the principle of equal pay for equal work, as far as Whites and Coloureds were concerned. In June, the Minister of Coloured Affairs, Mr. Loots, appealed to employers in both the public and private sectors to increase the wages of their Coloured workers, and stated that "we are striving towards a situation where we can accept equal pay. . . . We cannot close the pay gap at once, but we can aim at closing it ultimately and we can, at this moment in time, narrow it."³ A similar appeal to employers was made by the Minister of Defence when he opened the session of the "Coloured Representative Council" in August 1971.⁴ The Minister of Interior announced in June that the Public Service Commission had been instructed to prepare a comprehensive report and recommendations on how to close the gap between White and non-White wages, and a general increase for non-Whites in the public service was announced in September.⁵

There remain, however, several areas in which Whites and non-Whites perform equal work, sometimes side by side, and are still far from receiving equal pay because of official policy to apply differential salary scales. One of these areas is the medical profession. The following examples are taken from information supplied by the Minister of Interior on 8 February 1971⁵ concerning the revised salary scales applicable as from 1 January 1971 to doctors in state and provincial hospitals. White interns would earn a fixed salary of R.4,050, while Coloured and Asian interns would receive R.2,880, and African interns R.2,520. The salary scales of medical officers were as follows; for Whites, a starting salary of R.5,700, rising to a maximum of

¹ *Survey of Race Relations*, op. cit., p. 108.

² *The Star*, 15 Jan. 1972.

³ *Survey of Race Relations*, op. cit., p. 181.

⁴ *The Star*, 6 Aug. 1971.

⁵ *House of Assembly Debates*, 1971, No. 2, cols. 79-80.

R.8,100; for Coloured and Asian medical officers, the salary ranged between R.4,050 and R.6,000; and for Africans, between R.3,480 and R.5,400. At the top of the profession, a White medical professor would earn a fixed salary of R.12,000, while a Coloured or Asian professor would get R.7,800 and an African professor R.7,200. The Federal Council of the Medical Association of South Africa has for many years maintained that salaries should be based solely on length of service, qualifications and merit, and passed a further resolution to this effect at its meeting in 1971. The Council subsequently appointed a deputation to discuss with the Ministers of Interior and Health the question of eliminating the pay differential between White and non-White doctors.¹

The general picture which emerges from all these elements is somewhat complex, but it may nevertheless be possible to draw some tentative conclusions. First, a very large proportion of African workers and their families live at poverty levels. Second, the already enormous gap between White and African wages has tended to widen even further in most sectors. The wage position of Africans is worst in the mines, on the farms and in domestic service. In the manufacturing industry, African wages have been rising slowly, but too many employers still pay their African workers wages below the minimum necessary to maintain a decent standard of living. The position has improved most in banking, commerce and clerical occupations. At the same time, there appears to be a growing awareness, among responsible circles in South Africa, of the urgent need to improve African wages and to close the wage gap between White and non-White incomes, and some action to this effect has already been initiated by some South African and foreign employers.

However, while much action can be, and should be, taken to alleviate the hardship of African workers, it is important to bear in mind that such action cannot by itself bring about any definite solution to the problem. So long as South African law and practice discriminate against Africans and other non-White workers in regard to educational and training opportunities and access to skilled occupations and deny to Africans the rights of freedom of association and collective bargaining, income disparities will continue to be built into South Africa's labour system. Only if the *apartheid* system is replaced by one offering equal opportunities to workers of all races can equal justice in remuneration be achieved.

THE TRADE UNION SITUATION

There have been, by and large, no major developments in the trade union field to report on since last year. From various statements made in the course of the year by trade union leaders, it is evident that the South African trade union movement continues to be sharply divided on such key issues as job reservation and the training of Africans for skilled work. Generally speaking, the federations and unions affiliated to the South African Confederation of Labour, and in particular the White mine-workers' and building workers' unions, have supported the policy of job reservation

¹ *Survey of Race Relations*, op. cit., p. 308; *South African Outlook*, Nov. 1971.

and have objected strenuously to any proposals for a relaxation of this policy. However, it may be noted that the White railway staff associations have lately adopted a somewhat more flexible approach, and have put forward proposals for training African workers as " assistant artisans " on the railways. The other major section of the South African trade union movement, consisting of the unions affiliated to the Trade Union Council of South Africa (TUCSA), continues on the whole to take the view that job reservation has failed to protect the interests of the White worker, and that the occupational advancement of non-White workers should be allowed on condition that the " rate for the job " is applied.

According to information provided by the Minister of Labour on 22 February 1971 ¹, on the membership and racial composition of registered trade unions, there were 90 White unions with 350,191 members, 49 Coloured (including Asian) unions with 71,481 members, and 43 racially mixed unions with 165,570 members (54,841 White members and 110,729 Coloured and Asian members). If one compares these figures, which relate to membership as at 31 December 1969 (except for a few cases in which trade unions had already submitted their 1970 returns), with those which have been quoted in earlier Special Reports, it is evident that, despite official policy discouraging racially mixed unions (which, in particular, are placed at some disadvantage under the Industrial Conciliation Act), mixed unions continue to account for quite a substantial proportion of total union membership. It also appears that there has been a very large rise in Coloured and Asian membership (an increase of almost 60,000 members since 1967), which may reflect a growing interest in trade unionism among Coloured and Asian workers.

As regards the racially mixed unions it is interesting to note from information provided by the Minister of Labour in the House of Assembly on 11 March 1971 ², that seven such unions had been exempted indefinitely and another five for stated periods, from the statutory requirement under the Industrial Conciliation Act of having all-White executive committees, on the ground that there were too few White members to make this feasible. Six unions had been required to guarantee that there would be some representation of White members on the executive committee. Nine unions had been exempted indefinitely, six for stated periods and seven in respect of certain areas, from the statutory requirement that separate meetings must be held for White and Coloured members.

As is well known, African trade unions do not enjoy any official recognition or legal protection under South African legislation. There is very little information available about such *de facto* African trade unions as exist, but it is known that several such unions have practically ceased to exist because of the serious handicaps placed on their activities. From information received at the ILO, it would seem that the most active of these unions is the National Union of Clothing Workers (South Africa), with some 14,000 members. This union is apparently able to carry on trade union activities without undue interference and is informally consulted by the White

¹ *House of Assembly Debates*, 1971, No. 4, cols. 273-4.

² *Ibid.*, No. 6, cols. 475-6.

Garment Workers' Union before wage negotiations with employers take place. The general secretary of this union, Mrs. Lucy Mvubelo, visited the United States and Europe last year under a leadership exchange programme sponsored by the United States Government.

The general secretary of TUCSA, Mr. Grobbelaar, is reported to have called on both American and South African companies to help establish African trade unions and open negotiations to them.¹

The information supplied by the Minister of Labour on 22 February 1971² indicated that 218,805 White, 154,217 Coloured, 54,405 Asian and 489,367 African workers were covered by Industrial Council agreements concluded between employers and registered trade unions. The paradoxical situation which emerges from this is that over 53% of all persons covered by collective agreements are workers who are debarred by law from any participation in the conclusion of such agreements and who have had the provisions thereof extended to them by decision of the Minister of Labour.

As regards industrial disputes involving African workers in the Republic of South Africa, strike action occasionally takes place despite the heavy penalties imposed by law on strikes by Africans. The Department of Labour's annual report for 1970³ indicates that twenty-eight stoppages of work which could be regarded as "strikes" in terms of the Bantu Labour (Settlement of Disputes) Act had taken place during the year and had involved 2,157 African workers. In September 1971, 2,000 African stevedores in Durban threatened to strike if employers did not meet their demands for a wage increase. The demands were made anonymously, and no leaders could be identified. The Trade Union Council of South Africa offered to assist the workers, but the Department of Labour said that TUCSA had no right to become involved in the dispute since it was not recognised as a body to organise Africans. The employing company later announced that a 30 per cent wage increase had been granted with effect from 1 October. Its manager maintained that the increase had been under consideration since May and did not result from the threatened strike.⁴

Finally, in concluding this chapter, it may be mentioned that ILO publications and action concerning *apartheid* continue to be followed with interest in South African trade union circles. The resolution adopted at the 1971 Session of the International Labour Conference is mentioned in the annual report which the General Secretary of the Food and Canning Workers' Union (FCWU)—a Coloured union unaffiliated to any of the main trade union confederations—submitted to the 31st Annual Conference of the FCWU in September 1971. After quoting several paragraphs of this resolution, the report states: "It does our hearts good to know of this resolution—that the parliament of world labour is with us in our struggle for human and trade union rights".

¹ *Survey of Race Relations*, op. cit., p. 248.

² *House of Assembly Debates*, 1971, No. 4, cols. 273-4.

³ *Report of the Department of Labour for the Year ended 31st December 1970*, R.P. 93/1970.

⁴ *Survey of Race Relations*, op. cit., p. 247.

CHAPTER II

THE QUESTION OF "APARTHEID"
IN THE ILO AND THE UNITED NATIONS

As 1971 had been proclaimed International Year for Action to Combat Racism and Racial Discrimination by a decision of the General Assembly of the United Nations, the problem of *apartheid* naturally occupied a central place in international debate during that year. A number of events and decisions were connected with the observance of the International Year. The ILO was not only closely associated with the action which the United Nations undertook on this occasion but also took a number of decisions and actions of its own on the questions of *apartheid* and racial discrimination.

The present chapter is divided into two main sections, the first of which describes the action taken by the ILO, while the second reports on developments in the United Nations with which the ILO has been associated or which are otherwise of particular interest to the ILO.

ACTION TAKEN BY THE INTERNATIONAL LABOUR ORGANISATION

In April 1971 the International Labour Office published two reports which were intended to be major contributions by the ILO to the International Year for Action to Combat Racism and Racial Discrimination. The first of these was the general survey carried out by the ILO Committee of Experts on the Application of Conventions and Recommendations on the effect given to the Discrimination (Employment and Occupation) Convention, 1958 (No. 111) and Recommendation (No. 111), on the basis of reports requested under article 19 of the Constitution of the ILO. The survey covered both ILO member States which have, and those which have not, ratified Convention No. 111. In its examination of different situations and forms of national action for the elimination of discrimination, the report directed particular attention to the problem of racial discrimination.¹ The second publication was the *Seventh Special Report of the Director-General on the Application of the Declaration concerning the Policy of "Apartheid" of the Republic of South Africa*, which reported on labour developments in South Africa and selected as its main theme for the International Year the contribution which employers and workers, both within and outside South Africa, can make towards the elimination of *apartheid*.

¹ ILO: *Report of the Committee of Experts on the Application of Conventions and Recommendations, Volume B: General Survey on the Reports relating to the Discrimination (Employment and Occupation) Convention and Recommendation, 1958, Report III (Part 4B)*, International Labour Conference, 56th Session, Geneva, 1971.

At the 56th (1971) Session of the International Labour Conference a resolution concerning *apartheid* and the contribution of the International Labour Organisation to the International Year for Action to Combat Racism and Racial Discrimination was submitted jointly by eight Workers' delegates to the Conference. After very thorough discussion both in the Resolutions Committee and by the Conference in plenary sitting, this resolution, as amended, was adopted by the International Labour Conference without opposition on 22 June 1971.

In its operative part, the resolution pledged the support of the ILO to the International Year for Action to Combat Racism and Racial Discrimination and decided to give particular emphasis to the fight against *apartheid* in its contribution to the International Year. It appealed to member States to ratify and apply the International Convention on the Elimination of All Forms of Racial Discrimination and the Discrimination (Employment and Occupation) Convention, 1958 (No. 111) on the occasion of the International Year. As regards action directed towards the elimination of *apartheid*, the resolution called on member States and on employers' and workers' organisations to intensify their efforts during the International Year to promote effective action to secure the elimination of *apartheid* and its causes and, in particular, to abstain from any policy encouraging or facilitating emigration to South Africa in so far as it tends to consolidate the policy of *apartheid*. It further invited the Governing Body of the ILO to request the Director-General: (a) to ensure the widest dissemination of information on the evil consequences of *apartheid* in the social and labour fields, in particular by giving the largest distribution among employers and workers to the ILO's special reports on *apartheid* in as many languages as possible; (b) to invite member States, in consultation, so far as possible, with employers' and workers' organisations, to report regularly on the action taken by them to give effect to the ILO's policies in respect of *apartheid*; and (c) to submit to the Governing Body proposals for dealing with various forms of racial discrimination other than *apartheid*. Finally, the Governing Body was invited to give special consideration to all action required in order to maximise the effectiveness of the ILO Declaration concerning the Policy of *Apartheid* and the ILO Programme for the Elimination of *Apartheid* in Labour Matters, with a view to elaborating a coherent set of measures designed to contribute to restoring fundamental human and trade union rights in South Africa.

The Governing Body of the ILO considered this resolution at its session immediately following the 56th Session of the International Labour Conference. The Governing Body authorised the Director-General to communicate the resolution to the governments of member States and to national employers' and workers' organisations, as well as to international employers' and workers' organisations and to the intergovernmental agencies concerned, drawing attention to the paragraphs of the resolution of particular concern to them and requesting them to inform him of any action contemplated in this regard. The Governing Body also decided to request the Director-General to submit proposals with respect to operative paragraph 7 of the resolution (which relates in particular to the dissemination of information on *apartheid*) to the Governing Body at its 184th (November 1971) Session as well as to take

due account of the resolution in the preparation of the long-term programme of the ILO.

In accordance with these decisions, the resolution has been communicated by the Director-General to the governments of ILO member States and to national employers' and workers' organisations and the international bodies to which they are affiliated. The resolution was also communicated to the Secretary-General of the United Nations, drawing his particular attention to the paragraphs concerning the International Year for Action to Combat Racism and Racial Discrimination. In taking cognisance of this resolution, the United Nations informed the ILO on 18 August 1971 that the information would be taken into account in preparing the Secretary-General's report to the 26th Session of the General Assembly and that the Secretary-General deeply appreciated the very active participation of the ILO in the observance of the International Year. Finally, the resolution was also transmitted to the Directors-General of the Food and Agriculture Organisation of the United Nations (FAO), the United Nations Educational, Scientific and Cultural Organisation (UNESCO), the World Health Organisation (WHO) and to the Secretaries-General of the Organisation of African Unity (OAU), the Common African, Malagasy and Mauritian Organisation and the League of Arab States.

On the question of disseminating information on the evil consequences of *apartheid*, the Governing Body was informed at its November 1971 Session that, as an immediate measure, an updated version of the ILO's public information booklet entitled "The ILO and *Apartheid*"—which originally appeared in English, French and Spanish in 1969 and which presents in a form adapted to the general public the main findings contained in the ILO's special reports on *apartheid*—would also be published in Afrikaans, Arabic and Swahili. These versions of the booklet have now been printed, and arrangements are being made, through the ILO's network of regional offices and in co-operation with employers' and workers' organisations and regional intergovernmental organisations, for their wide distribution.

The ILO was also actively associated in other events connected with the International Year for Action to Combat Racism and Racial Discrimination which will be mentioned in the next section of this chapter. On 1 July 1971 the Director-General issued a special message for the International Year, in which he associated the ILO with the United Nations campaign against *apartheid* and racial discrimination undertaken on this occasion. After recalling the action already taken against *apartheid* by the ILO, the Director-General pledged the whole-hearted resolve of the ILO to co-operate in achieving a positive transformation of South Africa into a society offering equal justice and equal freedom to all its citizens.

ACTION IN THE UNITED NATIONS

This section deals with the following developments in the United Nations concerning the question of *apartheid* during the past year, in which the ILO participated or which are of particular interest to the ILO: (a) the continuing work of the Ad Hoc Working Group of Experts established by the Commission on Human Rights on

the question of trade union rights in South Africa; (b) the international seminar on racial discrimination organised by the United Nations in Yaoundé in June 1971; (c) the activities of the United Nations Special Committee on *Apartheid*, particularly in connection with preparations for an international trade union conference on *apartheid*, and the resolution adopted by the United Nations General Assembly on this question; (d) other resolutions of the General Assembly on the question of *apartheid*; and (e) the advisory opinion of the International Court of Justice, the decisions of the General Assembly and other recent developments concerning Namibia.

Report of the Ad Hoc Working Group of Experts

The work carried out by the Ad Hoc Working Group of Experts, which was established by resolution 2 (XXIII) of the Commission on Human Rights in 1967 to investigate allegations of infringements of trade union rights in South Africa and also the treatment of prisoners in South Africa, has been described in earlier Special Reports.

In February 1971, the Ad Hoc Working Group issued a further report¹ on trade union rights in southern Africa for submission to the Economic and Social Council of the United Nations at its resumed 50th Session (New York, April-May 1971). This report was based on evidence given at hearings conducted by the Working Group in New York, Geneva, and various capitals of Europe and Africa, including a statement made on 27 July 1970 in Geneva by a representative of the International Labour Office, and documentary material which included the ILO's Seventh Special Report on *Apartheid*. Among the international standards concerning trade union rights and related matters taken into consideration in this study, the Working Group listed the Constitution of the ILO and the Declaration of Philadelphia, international labour Conventions Nos. 11, 84, 87 and 98 relating to freedom of association, Conventions Nos. 29 and 105 concerning forced labour, Convention No. 65 concerning penal sanctions for breaches of contract, Convention No. 111 concerning discrimination in employment and occupation and Convention No. 117 concerning basic aims and standards of social policy. The Group made a certain number of conclusions and recommendations concerning the situation in South Africa and Namibia. It stated at the outset that the conclusions arrived at by the Group during the previous three years continued to be applicable to the present situation regarding trade union rights in South Africa. The Group concluded that the Bantu Laws Amendment Act had delegated job reservation powers to the administration, that the wages and salaries of African workers showed a clear discrimination between White and Black despite equal work and an equal level of work and that trade union leaders continue to be persecuted. With respect to the situation in Namibia, the Group found that the so-called South West African Native Labour Association (SWANLA) enjoyed a monopoly in the recruitment of African workers and reportedly used methods similar to slavery. Among its recommendations concerning South Africa, the Ad Hoc

¹ United Nations document E/4953 of 19 Feb. 1971.

Working Group proposed that "the report of the Group should be brought to the notice of the ILO, which should be invited to continue its efforts in negotiating with the Republic of South Africa with a view to stopping the discrimination against African workers, in particular as regards wages and salaries". The Group also recommended that the system of recruitment of African workers in Namibia should be subject to thorough investigation; that the United Nations, as the legal administering power, should develop model rules to be respected in the recruitment of workers in that territory, and that in all collective bargaining negotiations in Namibia, Africans should be represented by a non-official African to defend their interests and not by a South African official.

On the basis of this report, the Economic and Social Council adopted on 21 May 1971 resolution 1599(L), in which it endorsed the conclusions and recommendations of the Ad Hoc Working Group and strongly condemned the repression and detention of trade union leaders in southern Africa and called for their immediate and unconditional release. The Secretary-General of the United Nations was requested to bring the report of the Working Group to the attention of the ILO. The resolution further welcomed the activities of the ILO in this field and requested it to bring to an end the discrimination against African workers in southern Africa and to submit the results of its endeavours to the Economic and Social Council as soon as possible but not later than at its 54th Session (April-May 1973). The Ad Hoc Working Group is also requested to investigate thoroughly the system of recruitment of African workers in Namibia and other territories in southern Africa and to report thereon to the Council not later than at its 54th Session.

International Seminar on Racial Discrimination

At the invitation of the Government of Cameroon, the United Nations organised in Yaoundé from 16 to 29 June 1971 a seminar "on measures to be taken on the national level for the implementation of United Nations instruments aimed at combating and eliminating racial discrimination and for the promotion of harmonious race relations". This seminar was one of the activities recommended in the programme for the observance of the International Year for Action to Combat Racism and Racial Discrimination, which had been approved by the General Assembly in December 1969. It was attended by participants nominated by the governments of twenty-nine member States of the United Nations. In addition, the ILO, UNESCO and OAU were represented.

The agenda of the seminar covered the following questions: the causes and effects of racial discrimination in general and of *apartheid* in particular; legislative and administrative measures to be taken at the national level; contributions to international action, in particular with regard to activities aimed at combating the policy of *apartheid*; and educational measures aimed at combating prejudices which generate racial discrimination and in particular *apartheid*, and promoting understanding and harmony between the races. The documentation prepared for the meeting included working papers submitted by the ILO and UNESCO.

A number of conclusions were adopted unanimously by the participants. In particular, the seminar condemned racial discrimination as one of the greatest evils of our time, oppressive of human dignity and seriously endangering international co-operation and economic and social progress. On the national level, the seminar advocated far-reaching remedial and preventive measures by public authorities in the legislative, administrative, economic and social fields and other areas concerned. However, governments, non-governmental organisations and individuals should not be satisfied with results within their own national framework, but should support and participate in the international efforts to eliminate racial discrimination everywhere. The general ratification of international instruments concluded under the auspices of the United Nations and the specialised agencies would be a most effective step towards the achievement of this purpose. The seminar considered that these efforts should be strengthened by extensive measures in the fields of education and public information. Each State, and the international organisations concerned, should adopt practical steps to bring to the attention of public opinion the urgency of the necessary changes of attitudes and of the adoption of steps to eliminate racism and discrimination in all its forms during the present generation.

Activities of the United Nations Special Committee on "Apartheid" and Proposals for the Organisation of an International Conference of Trade Unions on "Apartheid"

The Special Committee on *Apartheid* carried out a very extensive programme of activities in the course of the past year. The Committee had been requested by the General Assembly: (a) to hold consultations with experts and representatives of the oppressed people of South Africa and with anti-*apartheid* movements; (b) to send a mission from United Nations headquarters to consult with the specialised agencies, regional organisations and non-governmental organisations on means to promote further concerted international action against *apartheid*; and (c) to send representatives to the United Nations seminar at Yaoundé and other international conferences on *apartheid* during the International Year. The Assembly had also requested the Special Committee—

in consultation with the Organisation of African Unity and the International Labour Organisation, to report to the General Assembly at its twenty-sixth session on the possibility of holding an international conference of trade unions in 1972, and on any alternative proposals which it may receive from the principal trade union federations for promoting concerted action against *apartheid* by the trade union movement at a national and international level".¹

The Special Committee appointed a mission, composed of its Chairman, Ambassador Farah (*Somalia*), Mr. Varga (*Hungary*) and Mr. Ahmad (*India*), which visited several capitals in Europe and Africa between 3 and 26 June 1971 for consultations in pursuance of the mandate which the General Assembly had entrusted to it. The mission, *inter alia*, visited Geneva during the International Labour Conference and held discussions with UNESCO and the OAU and with two major international trade union confederations, the International Confederation of Free

¹ Resolution 2671 D (XXV), operative paragraph 4.

Trade Unions (ICFTU) and the World Confederation of Labour (WCL). While the mission's schedule did not enable it to visit Prague for discussions with the World Federation of Trade Unions (WFTU), the mission was informed by a written communication of the position of this organisation regarding the proposed conference.

At a meeting held at the ILO on 12 June 1971, there was a general exchange of information on United Nations and ILO action against *apartheid*, as well as on the particular question of the proposed international trade union conference on *apartheid*.

These consultations are mentioned several times both in the detailed report which the mission submitted to the Special Committee after its return to New York,¹ and in the reports which the Special Committee submitted to the twenty-sixth session of the General Assembly.² As regards action against *apartheid* in general, the mission called attention to the necessity of promoting the information campaign against *apartheid* among trade union and workers' movements. The Special Committee's report to the General Assembly notes that "the work undertaken by UNESCO and the ILO in the field of information on *apartheid* continues to expand". In its report the mission also expressed the hope "that the ILO would continue to play the role of a watchdog on developments in South Africa in labour matters". On the question of the proposed trade union conference, the Special Committee's report mentions that, at the February 1971 Session of the Governing Body, the Worker members had maintained that the desirability of such a conference was necessarily a matter for the international trade union movement alone, and not for the ILO as a tripartite organisation. In its conclusions and recommendations, the mission put forward the view that the trade union movement is strategically placed to carry out an intensified world-wide campaign to inform public opinion of the evils of *apartheid* and that an international conference of trade unions against *apartheid* would have a concrete effect in enlisting the support of workers in many parts of the world. It noted that two of the major international trade union confederations had responded favourably to this proposal. The mission further considered that the United Nations is centrally placed to play a positive role in promoting and supporting an international trade union conference, which should preferably take place at the United Nations Office in Geneva immediately following the ILO General Conference in June.

On the recommendation of its Special Political Committee, the General Assembly on 29 November 1971 adopted, by 104 votes in favour, 1 against and 9 abstentions, a resolution entitled "Trade Union Activities Against *Apartheid*" as part of a combined resolution on the policies of *apartheid* (other parts of which will be reviewed briefly further on in this chapter). In the operative part of this resolution, an appeal is made to all national and international trade union organisations to intensify their action against *apartheid*, in particular by: (a) discouraging the emigration of skilled workers to South Africa; (b) taking appropriate action in connection with the infringements of trade union rights and the persecution of trade unionists in South

¹ United Nations document A/AC.115/L.308, 17 Aug. 1971.

² United Nations documents A/8422, 8 Oct. 1971, and A/8515, 12 Nov. 1971.

Africa; (c) exerting maximum pressure on foreign economic and financial interests which are profiting from racial discrimination against non-White workers in South Africa, in order to persuade them to cease such exploitation; and (d) co-operating with other organisations engaged in the international campaign against *apartheid*. The General Assembly decided to give further consideration to the proposed international trade union conference at its 27th Session and requested the Special Committee on *Apartheid* to send a mission to hold consultative meetings, if possible, with the workers' representatives at the International Labour Conference at Geneva, in June 1972, to consider lines of action which the trade union movement may take against *apartheid*, including the holding of the international trade union conference, and to invite representatives of international and regional trade union federations to attend those consultative meetings. Finally, the resolution requests the International Labour Organisation, and also invites the workers' representatives, to lend their co-operation to the Special Committee on *Apartheid* in preparing and holding the consultative meetings.

After further consultations between the Special Committee and the international trade union movement, a meeting was arranged on 29 February 1972 between the Chairman of the Special Committee and all members of the Workers' group attending the 185th Session of the Governing Body. Following this meeting, it is expected that consultative meetings will be held with workers' representatives at the 57th Session of the International Labour Conference in June 1972, to consider lines of action which the trade union movement can take against *apartheid*, including the holding of an international trade union conference.

Resolutions Adopted by the General Assembly

At its 26th Session, the General Assembly adopted on 29 November 1971, on the recommendation of its Special Political Committee, a combined resolution (2775 (XXVI)) entitled "The policies of *apartheid* of the Republic of South Africa", consisting of ten resolutions on various aspects of the policies of *apartheid* and international action against these policies. Apart from the resolution on trade union activities, which has already been summarised, the resolutions relate to arms embargo, educational material on *apartheid*, the programme of work of the Special Committee on *Apartheid*, *apartheid* in sports, the establishment of "Bantustans", the situation in South Africa resulting from the policies of *apartheid* and dissemination of information on *apartheid*.

Resolution 2775 B (XXVI) concerning educational material on *apartheid* is directed specifically to UNESCO and requests that organisation to prepare an educational kit on racial discrimination and *apartheid* in Southern Africa and to consider the production of films and audio-visual material on *apartheid*, with special reference to its adverse effects on education, science and culture.

Resolution 2775 C (XXVI) endorses the programme of work of the Special Committee contained in its report and authorises the Committee to send representatives or delegations to international conferences dealing with *apartheid* and to hold

consultations with experts and representatives of the oppressed people of South Africa, as well as anti-*apartheid* movements and non-governmental organisations concerned with the campaign against *apartheid*.

In resolution 2775 E (XXVI) the General Assembly again condemned the establishment by the Government of South Africa of Bantu homelands (" Bantustans ") and the forcible removal of the African people of South Africa and Namibia to those areas as a violation of their inalienable rights, and declared that the United Nations will continue to promote a solution to the situation in South Africa through the full application of human rights and fundamental freedoms to all inhabitants of the territory of South Africa, regardless of race, colour or creed.

Resolution 2775 F (XXVI), *inter alia*, requested all States to take steps to dissuade their nationals from emigrating to South Africa so long as the Government of South Africa pursues the policies of *apartheid*, and commended the activities of States, organisations and individuals engaged in dissuading economic interests from increased collaboration with South Africa and from profiting from racial discrimination and exploitation of African and other non-White workers. The Special Committee was requested to arrange for the preparation of special studies on *apartheid* and its international repercussions and to continue its close co-operation with other United Nations bodies concerned with a view to co-ordinated action to find ways and means of eliminating the evils of *apartheid*.

Finally, resolution 2775 G (XXVI) invites governments, specialised agencies and other organisations, information media and educational institutions, to co-operate with the United Nations in disseminating information on *apartheid*, and invites, in particular, the specialised agencies to contribute to the campaign against *apartheid* in the light of the recommendations of the Special Committee on *Apartheid*.

The General Assembly also adopted other resolutions relevant to *apartheid* and racial discrimination. Among the resolutions adopted on the recommendation of the Assembly's Third Committee, resolution 2785 (XXVI) concerning the International Year for Action to Combat Racism and Racial Discrimination, adopted on 15 December 1971, expresses its appreciation to the governments, United Nations organs, specialised agencies and other organisations which have contributed positively to the observance of the International Year and recommends that the measures and activities undertaken on this occasion be continued and expanded. The resolution also endorsed a suggestion which had been made earlier by the Economic and Social Council that the ILO and UNESCO be invited to provide the Commission on Human Rights with reports on the nature and effect of any racial discrimination of the existence of which they have knowledge in their sphere of competence, and requested that such reports should be submitted annually. The first such annual report on the nature and effect of racial discrimination, with particular reference to southern Africa, was submitted by the ILO to the United Nations in February 1972.

It will be recalled that the Fourth Special Report mentioned the General Assembly's decision in December 1967 to integrate the United Nations' special educational and training programmes for South West Africa (now Namibia), for the territories under Portuguese administration and for South Africa into one consolidated Educa-

tional and Training Programme for Southern Africa, and subsequent Special Reports have continued to report on developments concerning this Programme. The Secretary-General's latest report¹ on this subject indicates that total cash contributions since the decision to integrate the Programme, which envisaged a target of US \$3 million for the 1968-70 period, amounted to \$1,933,282 as of 8 October 1971, including \$600,036 pledged in 1971 by 22 member States. The report also mentioned that it had been agreed at a meeting of the Sub-Committee on Human Resources, Education and Training of the Administrative Committee on Co-ordination (Geneva, June 1971) that, with a view to further strengthening and expanding the Programme, consultations should continue to be held between the Programme and the agencies concerned and, in particular, the Office of the United Nations High Commissioner for Refugees (UNHCR), UNESCO, the WHO and the ILO. The General Assembly, on the recommendation of its Fourth Committee again adopted on 20 December 1971 a resolution (2875 (XXVI)) in which it again urgently appealed to all States, organisations and individuals to make generous contributions to the Programme. The resolution also noted with approval the efforts made to strengthen co-operation between the Programme and the UNHCR, the specialised agencies and the OAU and hoped that these efforts would be continued with a view to further co-ordination of their activities in the field of education and training for persons from the territories concerned.

The Question of Namibia

It was reported last year in the Seventh Special Report that the United Nations Security Council had decided on 30 July 1970 to request the International Court of Justice for an Advisory Opinion on the legal consequences of the continued presence of South Africa in that territory. On 21 June 1971 the Court delivered its Advisory Opinion.²

After ruling on certain preliminary objections and applications made by the Government of the Republic of South Africa, the International Court of Justice decided, by 13 votes to 2: (1) that, the continued presence of South Africa in Namibia being illegal, South Africa is under obligation to withdraw its administration from Namibia immediately and thus put an end to its occupation; and, by 11 votes to 4, (2) that States Members of the United Nations are under obligation to recognise the illegality of South Africa's presence in Namibia and the invalidity of its acts on behalf of or concerning Namibia, and to refrain from any acts and in particular any dealings with the Government of South Africa implying recognition of the legality of, or lending support or assistance to, such presence and administration; (3) that it is incumbent upon States which are not Members of the United Nations to give assistance, within the scope of (2) above, in the action which has been taken by the United Nations with regard to Namibia.

¹ United Nations document A/8485, 29 Oct. 1971.

² "Legal Consequences for States of the Continued Presence of South Africa in Namibia (South West Africa) notwithstanding Security Council Resolution 276 (1970): Advisory Opinion", in *I.C.J. Reports 1971*, p. 16.

On 20 December 1971, the General Assembly adopted, on the recommendation of the Fourth Committee, resolution 2871 (XXVI) on the question of Namibia, in which it welcomed the Advisory Opinion of the International Court of Justice of 21 June 1971, condemned the Government of South Africa for its continued refusal to put an end to its illegal occupation and administration of the territory, and called upon all States to respect strictly the resolutions of the General Assembly concerning Namibia and the Advisory Opinion of the Court. The resolution, *inter alia*, requested all States and the specialised agencies, in co-operation with the OAU, to render all moral and material assistance necessary to the Namibian people for continuing their struggle for self-determination and independence and to work out concrete programmes of assistance to Namibia. It also invited the specialised agencies to give full publicity, through all media, to the question of Namibia and to the conditions prevailing in the territory to which their respective spheres of competence are related.

Recent developments inside the territory of Namibia itself have also come to the attention of world opinion. It has been extensively reported¹ that over 5,000 Ovambo workers in the territory's capital, Windhoek, began a strike on 13 December 1971 in protest against the contract labour system and their conditions of employment. The strike paralysed the city's building industry and disrupted the retailing, manufacturing and transport industries. It then rapidly spread to other parts of the territory, bringing in particular the copper mining industry to a virtual standstill. The strike, which involved over 12,000 Ovambo contract workers, lasted several weeks. The strikers' demands included, in particular, the abolition of the contract labour system, under which African workers are hired by employers through the intermediary of the so-called South-West African Native Labour Association (SWANLA), cannot choose or change their employer, live separated from their families and are paid at wage rates which are only a small fraction of those received by White workers. Over 11,000 workers were repatriated by the Government to Ovamboland. According to reports which have appeared in the South African press², agreement was reached towards the end of January 1972 between the Government of South Africa and the Ovambo tribal authorities, under the terms of which SWANLA would be abolished and employment would in future be arranged directly between the parties concerned. However, at the time of drafting of this report, the situation remained unclear and the South African Government had imposed a state of emergency in Ovamboland. These events will be dealt with more fully in the next Special Report.

On 19 January 1972 the United Nations Council for Namibia met in New York to hear three petitioners who informed the Council of the circumstances of the strike. After hearing the petitioners, the Council decided unanimously to express its complete solidarity with the strikers in their determined struggle against oppression and exploitation and its support for their just demands.³

¹ The reports on these events have been summarised in "Report of the Ad Hoc Working Group of Experts Prepared in Accordance with Resolution 7 (XXVII) of the Commission on Human Rights", United Nations document E/CN.4/1076, 15 Feb. 1972.

² *The Star*, 22 Jan. 1972.

³ Office of Public Information, United Nations, New York, Press Release NAM/2, 20 Jan. 1971.

The United Nations Security Council met, for the first time ever in Africa, in Addis Ababa from 28 January to 4 February 1972 to discuss questions concerning particularly the situation in southern Africa. In a resolution dealing with Namibia¹, the Council condemned the refusal of South Africa to comply with United Nations decisions and called upon South Africa to withdraw its forces and personnel from the territory. The resolution also condemned recent repressive measures against African workers and called upon the Government of South Africa to end these measures immediately and to abolish any system of labour which may be in conflict with the basic provisions of the Universal Declaration on Human Rights. It likewise called upon all States whose nationals and corporations are operating in Namibia to use all available means to ensure that such nationals and corporations conform to the provisions of the Universal Declaration in their policies of hiring Namibian workers.

In another resolution², the Security Council invited the Secretary-General of the United Nations, Mr. Kurt Waldheim, to initiate as soon as possible contacts with all parties concerned with a view to establishing the necessary conditions so as to enable the people of Namibia to exercise their right to self-determination and independence, and called upon the Government of South Africa to co-operate fully with the Secretary-General in the implementation of this resolution. The Secretary-General subsequently received a formal invitation from the South African Government to visit South Africa for discussions, and undertook this visit in March 1972. Further developments will be reported in the next Special Report.

¹ United Nations document S/RES/310(1972), 4 Feb. 1972.

² Ibid., S/RES/309(1972), 4 Feb. 1972.

CHAPTER III

THE RATIONALE FOR CHANGE

South Africa is not immune to the forces of change. One aspect of this reality has been expressed by a South African trade unionist, Mr. Robert Kraft, Assistant General Secretary and Economist of the Trade Union Council of South Africa (TUCSA), in the following terms:

South Africa is on the brink of its third industrial revolution. The first, based on primary resources, came with the discovery of diamonds and gold a century ago, and the second in the thirties and during the years of the Second World War, when secondary industry expanded considerably. The third industrial revolution will have to be based on human resources.¹

Some of the implications of this development for South Africa, which will be examined briefly below, must lead one to question whether a labour system based on exploiting the majority of the labour force at cheap wage rates and denying it equal opportunities in employment and training will continue to be of benefit to any class of workers in South Africa's multiracial economy.

First, there can be no job security for one class of workers as distinct from job security for all workers. The industrial colour bar, which creates an artificial monopoly of skilled work in favour of the White worker, affords no ultimate protection for his interests but induces him into an illusion of security. At least a part of the South African trade union movement is beginning to realise this fact. As Mr. Robert Kraft, in the article already quoted, has pointed out:

Merely by fencing off a job for the White worker through job reservation, the worker is given a false sense of security, for the job may not exist in six months' time because of fragmentation and innovation . . . even if all the Africans were to be sent to the Homelands the White would still not get effective job and income security, because he then faces an even greater threat to his job through the introduction of accelerated automation to replace dwindling manpower resources. The TUCSA trade unions regard the real threat to workers' jobs as being changing methods, machines and products and not the racial composition of the labour force.²

The very jobs which are today protected by job reservation may very likely disappear tomorrow because of technological change. Job reservation makes the protected worker complacent and removes necessary stimuli for readapting himself to changing circumstances. Leaders of commerce and industry, including the president of the Transvaal Chamber of Industry, the president of the Building Industries'

¹ Robert L. Kraft: "Labour: South Africa's challenge of the '70s", in *Optima*, (Johannesburg), Mar. 1971.

² Kraft, *op. cit.*, pp. 9-10.

Federation and the secretary of the Johannesburg Chamber of Commerce, last year publicly criticised South Africa's White workers for poor-quality work, falling productivity and absenteeism.¹ A survey carried out by the Bantu Wage and Productivity Association disclosed that in certain industries productivity had risen by as much as 20 per cent since African workers had taken over certain jobs from Whites the previous year.² In the words of one South African economist "work reservation and other similar curbs, far from rewarding merit, protect members of one race against the efficiency of members of another race".³ No modern industrial system can be conducted on this basis.

Second, there can be no realistic incomes policy which is based on wage discrimination between different categories of workers. It is still too often assumed that South Africa derives economic advantages from having an abundant "cheap" labour force, paid at wage rates which are far below those of a privileged minority of the labour force. This may have been largely true in the past, but in the present situation characterised by an acute shortage of skilled manpower this policy is a major factor contributing to inflation. In particular, the restrictions which the industrial colour bar places on the more productive use of non-White labour has led to a situation where certain categories of skilled workers, in which numbers are artificially kept scarce because of job reservation, can demand and receive wage increases which bear no relation to the real economic value of their work. For example, the president of the Chamber of Mines of South Africa stated in June 1971 that "in order to maintain our White labour force at its present strength the mining industry has already been compelled to increase the wages of skilled men at about double the rate of increase of productivity".⁴ A study of South African wage movements carried out in 1970 found that "only White wage movements have been inflationary in the sense that they have exceeded the growth in productivity (which they have done in all but one of the years studied). Black wage movements, on the other hand, have in many years failed to reach the productivity growth line and have exceeded it not at all."⁵ A policy under which the African and other non-White workers would receive a fair remuneration for their labour (and in particular equal pay for equal work), enabling them to maintain a decent standard of living for themselves and their families, would therefore result in the establishment of a sounder incomes policy; in addition, it would give the non-White worker a real stake in the economic prosperity which he so largely helps to create through his labour and would lead to a considerable expansion of the consumer market for the goods produced by the South African economy. In the last resort, there can be no economic security for the White worker based on a glaringly unequal distribution of wealth. This point was emphasised recently in a speech which the South African Minister of

¹ *The Star*, 27 Mar. 1971.

² *Ibid.*, 6 Aug. 1971.

³ W. F. J. Steenkamp: "Labour Policies for Growth during the Seventies", in *The South African Journal of Economics*, June 1971, p. 108.

⁴ *The Star*, 22 June 1971.

⁵ Ian Hume: "Notes on South African Wage Movements", in *South African Journal of Economics*, Sep. 1970.

Interior, Mr. Gerdener, was reported to have made to a business group in Johannesburg. " Throughout history ", the Minister said, " it has been proved that such gigantic differences in living standards as we have in South Africa can convert neighbourliness into enmity. It can be more serious. It can lead to violence and murder because the less privileged of the two can no longer tolerate the apparent wealth, ease and prosperity of his neighbour. " ¹

There can be no sound industrial relations system which exists only for some classes of workers, and from which the majority of the labour force is excluded. The ILO's Special Reports have time and again brought forward evidence showing that the exclusion of African workers from membership of trade unions recognised under the law and from the normal collective bargaining process has seriously weakened the South African trade union movement as a whole. For this reason, the registered trade unions cannot be genuinely representative of the broad mass of the working population, and their bargaining power is being steadily diminished because they represent a declining proportion of the labour force as opposed to the growing mass of unorganised labour composed of the African workers. The more responsible trade union leaders in South Africa are fully alive to the dangers of this situation.

There can, likewise, be no lasting industrial peace in which freedom of action is given to some classes of workers and denied to the majority of workers. The South African Government has frequently boasted about South Africa's record of industrial peace, but it must not be forgotten that under South African legislation strikes by African workers incur very harsh penalties even in cases where it would be perfectly lawful for workers of other races to go on strike. In the last resort, genuine industrial peace can be based only on agreements freely entered into, and disputes freely settled, between employers and employees. Recent events in Namibia have shown up the essential fragility of industrial peace based on repression.

Again, a modern industrial society cannot afford to maintain two contradictory labour systems for different classes of workers, one of which is based on freedom of employment and freedom of movement, whereas the other—applied to the great majority of the labour force—reduces the worker essentially to the status of a temporary migrant, with no real freedom to choose or change his employment and with the right to live and work in the main urban and industrial areas of his country only as long as his labour is needed there. Whatever the theoretical premises on which the Government's policy of " separate development " is based, it is becoming increasingly evident that the urban African is a permanent and indispensable element in the life of South Africa's " White areas ". In the years to come, South Africa will need a more highly trained, a more productive and therefore a more stable labour force. In this context, as the Sixth Special Report pointed out, " South Africa's present migratory labour system—under which the great majority of African workers are treated as undifferentiated labour units, shunted back and forth from one labour contract to the next, denied occupational advancement and the chance to improve their skills, badly paid and denied the right to live a normal family life—will

¹ *Survey of Race Relations*, op. cit., p. 183.

increasingly appear to be a costly waste of human resources".¹ Furthermore, no labour system can in the long run be maintained without the consent of the workers themselves. The implications of the Namibian strike against the contract labour system will certainly not be lost on South Africa.

Education and training are vital elements in a human resources development policy. South Africa is going to require an increasingly better qualified and educated labour force. The facts of life in South Africa are that 4 million Whites cannot continue to provide the management and skills required for a population of nearly 22 million people. In this light, an educational policy which provides free and compulsory education to one racial group but not to the majority of the population, which not long ago was estimated to be spending a general average of R.228 per White pupil and R.14 per African pupil² and which provides extremely limited training opportunities to the majority of its labour force is directly self-defeating. It amounts to deliberately depriving South Africa of leadership and skills which the country will badly need in the interests of all its population, the Whites included.

Finally, as regards the future of South Africa as a free society, it is an illusion to believe that democracy, human rights and civil liberties can exist for one section of the population if they do not exist for all sections of the population. This has been demonstrated by the gradual erosion of civil liberties which has taken place in South Africa and which has affected the freedom of Whites as well as of non-Whites—as evidenced by numerous recent examples of White churchmen, student leaders, journalists, etc., who have been placed on trial, detained and banned because of their opposition to *apartheid* policies. The accumulation of repressive legislation, which has been described in successive Special Reports, has been aimed at reinforcing the security of the White population but, apart from also restricting the freedom of the Whites themselves, it will not in the long run ensure their security in the South Africa of tomorrow. This point was cogently made in a lecture on "Freedom and state security in the South African plural society" which Professor A. S. Mathews, Dean of the Faculty of Law of the University of Natal, delivered in Johannesburg in August 1971. In particular, he said the following:

The insupportable assumption made by the security hawks in South Africa is that a stable state can be constructed on a foundation of restrictive laws and naked force. It is power not security which comes out of the barrel of a gun. There has been an almost total failure to perceive the relation between security (in a deeper sense than the power to enforce immediate compliance) and the satisfaction of the legitimate claims of the major groups in society. In brief, social justice is an essential component of an effective security policy.³

All of what has been said above underlines the magnitude of the transformation which has to take place in South Africa. However, one encouraging new element in the situation is the increasing number and surprisingly wide range of White South Africans in all walks of life (including academics, students, churchmen, economists, businessmen, industrialists and trade unionists) who acknowledge the need for change.

¹ P. 32 of the report.

² *Survey of Race Relations in South Africa*, 1970, pp. 205-232 (estimates relating to 1968-9).

³ *Race Relations News*, Sep. 1971.

Of course, not all are agreed on the extent or timing or method of change. What is important, though, is that the recognition that *apartheid* holds no promise for the future of South Africa is gaining ground.

Because official policy is immobilised by the outdated racial concepts of *apartheid*, the initiative in getting South Africa on the move away from this policy must come from those elements which have expressed a belief in the need for change. In particular, South African employers and trade unions, acting responsibly together, can do much to promote the necessary changes in the labour and social fields on the lines suggested in last year's Report. There is also much room for dialogue between the population groups in South Africa, but it must be real dialogue between equal partners on equal terms, and not on a master and servant basis.

The world community also has a decisive role to play in this connection. As has been shown in Chapter II, the eyes of the world are on South Africa. The united views of governments, employers and workers from all over the world on the question of *apartheid* have been expressed unequivocally in the ILO. It follows from this that all three elements in the ILO's tripartite structure must carefully consider what they can do to assist the process of change in South Africa. In particular, international business should consider the implications of its involvement in the South African economy and at least ensure that it fully applies in South Africa the fair labour standards which it recognises and applies in its operations in other parts of the world. Governments might also be able to exercise a positive influence by considering the relationship between trade exchanges and fair labour standards, and in particular the desirability that goods imported should have been produced under conditions which do not violate fair labour standards. As recommended in the resolution adopted by the Conference at its 1971 Session, governments, and employers' and workers' organisations also have a responsibility to discourage the emigration of skilled workers to South Africa in so far as it helps to consolidate *apartheid* labour policies, and in particular the industrial colour bar. On a more general level, as the Fourth Special Report stated, "a great responsibility likewise falls on other nations to show by their example that problems of the kind encountered in South Africa are capable of solution through the application of universally recognised precepts and values. The problems may arise in South Africa in a special form but the principles involved are universal." ¹

Time is fast running out, but given the necessary will inside South Africa itself, and with the help of responsible international opinion, there is no reason why a fundamental transformation of South Africa into a society offering equal rights and opportunities, and a just share in its wealth, to all its citizens should not take place. South Africa is fortunate in being so richly endowed in natural resources and human potential that this transformation need not take place at the expense of the living standards of any group of people. All can benefit from fundamental change. But change must come about—in the interests of the privileged, no less than in those of the under-privileged.

¹ P. 39 of the report.

APPENDIX 11

INDUSTRIALIZATION, FOREIGN CAPITAL AND FORCED LABOUR IN SOUTH AFRICA

NOTE

The Unit on Apartheid was established in the Secretariat of the United Nations, in pursuance of General Assembly resolution 2144 A (XXI) of 26 October 1966, "to deal exclusively with the policies of apartheid, in consultation with the Special Committee on the Policies of Apartheid of the Government of the Republic of South Africa, in order that maximum publicity may be given to the evils of those policies". Among the functions of the Unit is the preparation of special studies in apartheid.

This study on industrialization, foreign capital and forced labour in the Republic of South Africa was prepared by Mr. Sean Gervasi at the request of the Unit on Apartheid. Mr. Gervasi is at present research officer in economics at the Institute of Commonwealth Studies at Oxford University. The views expressed are those of the author.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers.

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

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PREFACE

This is intended as a preliminary study of the general economic and political situation in southern Africa. South Africa, of course, is the focus of the study. But economic and other changes taking place in the Republic are beginning to affect the entire southern part of the continent. It is therefore impossible to consider the question of South Africa without raising other issues.

The study does not pretend to present an exhaustive analysis. It is a first attempt to understand what is happening in southern Africa. None the less, a considerable amount of new research has been undertaken especially for this report and the facts which have come to light tend to support the main conclusions which are set out here. These conclusions underscore the urgent need for a re-appraisal of the policy of "watchful waiting" which so many countries have pursued in respect to southern Africa.

This study was prepared with the assistance of Mr. R. Johnstone, Mr. T. Pateman, Mr. S. Bery and Miss H. Lackner.

Sean Gervasi

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It should be noted that the unit of currency in the Republic of South Africa is the rand (R), equivalent approximately to \$US1.40. Wherever possible in the text, the conversion to dollars has been made. The tables based on South African sources, however, are calculated in terms of rands.

I. INDUSTRIALIZATION AND POVERTY

1. South African society presents an extraordinary paradox. South Africa is officially classified as a developed economy. And in some senses its economy is very strong. At the same time, the mass of the population lives under conditions of grinding poverty. They have derived almost no benefit from the process of industrialization which has been taking place during recent decades. The South African experience, more than that of any other country perhaps, must force us to examine the meaning of the term "development" as it is presently used.

2. During the post World War II period, economic growth in South Africa was more rapid than in almost any other country. The gross domestic product in 1946 was R. 1,600 million (\$2,240 million). By 1969 it had risen to R. 11,635 million (\$16,289 million). The annual rate of growth between 1946 and 1966 was more than 8 per cent at current prices. Real per capita income increased at a rate of nearly 3 per cent. These rates of growth were high by any standards.

3. Economic growth in the 1960s, however, was even more rapid. Total output increased at an average rate of nearly 10 per cent. Gross domestic product at constant prices increased at a rate of more than 6 per cent. (See table A 1.) These figures indicate two things. First, South Africa is developing a powerful industrial base, for only an economy which is well along the road to industrialization can sustain such rates of growth. Second, they indicate that the pace of industrialization was being forced.

4. The economy has been deliberately stretched to the limits of its capacity. That is why South Africa has been plagued by insistent inflationary pressure and recurrent balance of payments crises. The average price rise in the 1960s was nearly 3.5 per cent per year. In recent years it has been higher. In four of the last five years, the country has had deficits on its current account. The deficits in three years were substantial.

5. Such a rapid growth can only be achieved by concerted effort. In South Africa that effort has been guided by a Government whose apparent intention is to secure a greater degree of economic independence by rapid industrialization. South Africa is a private enterprise economy in name only. The influence of the State in the economy is now paramount.

6. That South Africa has been moving very rapidly towards industrialization is clear from the changes in economic structure which have occurred over the last twenty years or more. In the late 1940s, South Africa was still basically a colonial economy. Agriculture was the predominant sector of production, and much of its output was shipped to Great Britain and other wealthy countries. The importance of agriculture has since declined sharply. That sector now produces no more than 10 per cent of the national product.

7. The manufacturing sector, by contrast, has increased its share of total output significantly -- and very rapidly. In the period 1947-1951, it accounted for 10.5 per cent of national output. By the mid-1960s, the manufacturing sector was producing 21 per cent of total output. (See table A 3.) Within the manufacturing

sector there has been an important diversification of production. The most important developments have been in the processing of basic and intermediate raw materials.

8. But South Africa now has a number of modern and sophisticated industries producing final goods as well. The engineering, textile, pulp and paper and chemical industries have all developed rapidly in the last two decades. The net result is that South Africa now has an extensive and sophisticated industrial base. Its economy is no longer the typically colonial one. South Africa has become an important industrial power.

9. The mining industry has always played a major role in the South African economy. The production of gold is still important as a means of financing part of the perennial trade deficit. But the importance of the mining industry is declining. The boom of the 1950s should not be allowed to obscure this trend. South Africa's mines, once the heart of the economy, now account for only 12 per cent of total output. Manufacturing and construction together produce more than a quarter of total output.

10. The rapid modernization of industry, the extraordinarily high rate of expansion and high per capita income suggest a wealthy and evenly developing economy. This is the picture conveyed by official sources and by the kinds of statistics normally used to assess the economic strength of a country. It is, however, a very misleading picture.

11. Industrialization is now a major goal of every poor country for the simple reason that it is the only way out of poverty. Industrialization is expected gradually to eliminate poverty and, at the very least, to improve the conditions of life of the majority of people. This is the most important potential of modern technology. In South Africa, however, that potential is not being realized. Industrialization is bringing enormous benefits to a small part of the population. For the rest, it means increasing hardship and poverty.

12. The whites of South Africa constitute less than 20 per cent of the population. There are nearly four times as many Africans as whites. Africans provide nearly 70 per cent of the total labour force. The difference between the material condition of Africans and that of whites is enormous. Most whites are exceedingly well off by any standards. The Africans are very poor. The condition of Coloured people and Asians is in most cases only marginally better than that of Africans. South Africa is not one nation but two.

13. The rapid economic expansion of recent years has brought about an important shift of the population to urban centres. All races have moved to the cities in growing numbers. In 1960 there were approximately 7.5 million people in the cities. Nearly 3.5 million urban inhabitants were African. By 1968 their numbers alone had increased by nearly 900,000. And the total urban population was probably in excess of 9.5 millions. South Africa had become urbanized in the space of twenty-five years. (See table A 8.)

14. Many observers expected that the shift of the African population to the cities would lead to a significant improvement in their economic situation. For the cities offered the possibility of industrial employment and higher wages than could be had on the farms or in the mines. This has proved a false hope. The control of non-

white labour is now almost total. The effects of that control have been to deny Africans the normal benefits of more skilled employment and, indeed, to increase the gap between the rich whites and the poor Africans.

15. In early 1968, a white construction worker earned more than five times as much as an African co-worker and more than twice as much as an Asian. In manufacturing a white worker earned approximately R. 244 (\$342) per month, while the average monthly wage for an African was something over R. 46 (\$64). In mining in 1967 the average monthly wage for an African was just over R. 17 (\$24), with some additional payments in kind. A white miner earned R. 283 (\$395) on the average. (See table A 10.) These contrasts alone suggest that economic growth in South Africa has produced little benefit for Africans and not very much more for other non-whites.

16. It is hardly surprising that the distribution of income among the races in South Africa should be so unequal. According to the Financial Mail, the average monthly per capita income among Africans in 1969 was R. 7 (\$10). Average white per capita income was R. 95 (\$133), or more than thirteen times as much. Whites constituted less than 19 per cent of the population, but they received 74 per cent of all income. Africans, constituting 69 per cent of the population, received only 19 per cent of all income. (See table A 9.) Discrepancies of this kind are almost unknown in other countries with high levels of per capita income.

17. The economic situation of many Africans is now quite desperate. There is good evidence that the standard of living of Africans in the reserves has actually fallen over the last two decades. The Tomlinson Commission estimated in the mid-1950s that income per head in the reserves was approximately R. 48 (\$67). A recent estimate places per capita income in the reserves at R. 53 (\$74). Since the rise in prices has been steady and rapid, the real income of Africans living outside the cities must have fallen considerably. ^{1/}

18. The condition of Africans in the reserves can only be described as one of abject poverty. There is a mass of other evidence corroborating the income statistics. According to a survey conducted in 1966, almost half the children born in most reserves were dying before the age of five. ^{2/} Infant mortality of this kind is unknown in any other industrial country. It can only mean that the vast mass of the population in the typical reserve is living well below the level of subsistence most of the time.

19. The income statistics for urban Africans are no less striking. In Soweto, an African suburb of Johannesburg of some 600,000 people, 68 per cent of the families surveyed were living below the poverty datum line. The average monthly shortfall in income per family was in most cases, more than twenty per cent of the minimum essential expenditure. (See table A 11.) The incidence of poverty among Africans in other cities is almost certainly as great.

20. The meaning of these figures is that economic development in South Africa has been, to say the least, distorted. In 1966 white households in the ten principal urban areas had average incomes of R. 4,637 (\$6,492). ^{3/} Yet the mass of the population continues to live in poverty from which there is apparently no escape.

^{1/} South Africa House of Assembly Debates (Hansard), 3 February 1969, col. 16.

^{2/} The Star, Johannesburg, 10 May 1969.

^{3/} November 1966 Family Expenditure Survey, Report No. 11-06-01.

An economy which produces such results is not really developed, for the first priority of economic growth is to raise the level of living of the population.

21. It is true that many rich countries have failed to eliminate poverty altogether and that there remain many poor among the rich in countries which are highly industrialized. Nonetheless South Africa is the only such country to have forced the vast majority of the population to live below a level of physical, as distinct from cultural, subsistence.

22. The State in South Africa controls almost every aspect of the lives of Africans. These controls will be discussed in a later section of this study. The persistence of poverty in such a situation can only be seen as the outcome of deliberate policy. The meaning of this poverty, and of all the regulations which ensure its persistence, is that one of the principal goals of the State is to ensure the dominance and privileged position of whites.

23. If the State has been successful in ensuring white predominance, it has been somewhat less so in pursuing the aim of economic independence. The policy of forced industrialization has brought results. South Africa is now somewhat less dependent on foreign trade and the inflow of foreign capital than it once was. But the success of the industrialization policy has increased the demand for new kinds of goods and for foreign capital. South Africa is consequently still confronted with serious balance of payments problems.

24. The first and most obvious of these is the persistent trade deficit. Total imports increased by more than 100 per cent between 1961 and 1969 while exports increased by only 50 per cent. So the trade gap has been growing. In the last five years, it has thrice exceeded R. 600 million (\$840 million). The real pressure of rising imports is even higher than indicated by the actual trade deficit for import demand has had to be damped down frequently by deflationary fiscal and credit policies. (See table A 12.)

25. South Africa also runs a significant deficit for services. The gap between service payments and receipts has been increasing rapidly. In 1961 the services deficit was R. 282 million (\$395 million). By 1969 it had risen to R. 400 million (\$560 million). (See table A 12.)

26. The pressure on the country's current account is therefore substantial. The one factor which makes it even remotely possible for South Africa to continue running such large deficits is the production of gold. This increased from R. 576 million (\$806 million) in 1961 to R. 847 million (\$1,186 million) in 1969. But even this expanding output could only partially relieve the pressure on the current account. In 1961 gold output financed more than 50 per cent of imports. In 1969 gold was financing no more than 40 per cent of imports.

27. The balance of payments problem has consequently had to be solved by a policy of stop-go similar to that pursued by Great Britain over the last two decades. One further factor, however, has significantly lightened the burden. In the early 1960s South Africa had become a net exporter of capital. In recent years there has been a massive net inflow of capital. Most of this has been long-term direct investment in the private sector but there have also been significant inflows of public capital.

28. South Africa is no longer as dependent as it once was for imported manufactures. But the rise in the level of **output** has greatly increased the demand for expensive capital and other goods. This has raised the import bill. At the same time, the pace of change has been forced, and rapid growth has necessitated, or been made possible by, substantial imports of capital. It is also clear, since exports and gold production account for such a large proportion of domestic output, that South Africa can ill afford any shrinkage of its foreign markets.

29. In short, South Africa has largely escaped from the situation of colonial dependency, but it has become dependent on the world in new ways. At this point in time it would be out of the question for South Africa to try to "go its own way in the world". In the not-too-distant future, however, the country might well become capable of providing much more of the capital for investment and a far larger proportion of the sophisticated technology continued expansion demands.

30. It is a commonplace that the South African Government has been responsible for the rationalization and extension of apartheid over the last two decades. What is less well known is that it has also played a key role in the process of industrialization. Government policy has been instrumental in raising the proportion of expenditure devoted to investment. It has also provided directly a rising proportion of the finance for gross domestic investment. (See table A 17.) By 1969 the public sector was financing nearly 50 per cent of gross fixed domestic investment.

31. Economic growth, however, demands more than just a rise in investment. Investments must go to those areas which are crucial to industrial development, and particularly to technologically advanced industries. The State in South Africa has played an exceedingly important role in directing investment to key industries. It has provided a sophisticated and enormously expensive infrastructure. It has, through its own efforts, developed important new industries. And it has provided finance and other assistance for key projects in the private sector.

32. Public corporations in particular have played a major role in accelerating industrial development. Corporations like ESCOM (electricity), ISCOR (iron and steel) and SASOL (petroleum) have been and are being used to overcome important bottlenecks in the development process. In terms of assets and turnover, these corporations are larger than the industrial giants of the private sector. (See table A 16.) In many respects they have played a more important, if less visible, role than financial giants like De Beers and Anglo-American.

33. Today South Africa is a formidable power in its own right. It is industrialized, and its white citizens are wealthy. From a political point of view, the Government's efforts over the last twenty years have brought success. Precisely that success, however, may prove a source of serious economic instability in the not-too-distant future. For the impoverished condition of the mass of the population means that South African industry will be denied the domestic markets which have been essential to growth in other countries. There are signs that the economy is already finding the domestic market too confining.

34. Thus apartheid itself must present barriers to continued economic growth. The classic way of overcoming the limits of the market in private enterprise economies has been by the expansion of trade and the export of capital. As the process of industrialization moves into its final stages, South Africa may find itself under great pressure to expand externally.

35. The peculiar dilemma of white South Africans today is simple enough: world opposition to white supremacist policies is forcing the Government and its supporters to retreat into the laager. At the same time, however, growing economic pressures, generated by the contradictions of apartheid, are forcing the country to increase its exports of goods and capital.

36. The peculiar economic situation of South Africa presents more than just one difficulty. South Africa has freed itself from certain colonial ties by industrializing. It has done so at precisely the moment in history when it is becoming less and less possible to talk of any nation being economically independent of others. The developed economies of the world are increasingly tied together by the growing flows of trade and capital. South Africa is highly dependent on the world economy. Despite the strength and wealth of its economy, therefore, and despite the coherence of its policies, it remains vulnerable to action by the community of nations.

TABLE A 1

SOUTH AFRICA: THE GROWTH OF THE ECONOMY, 1962-1969

	1962- 1963	1963- 1964	1964- 1965	1965- 1966	1966- 1967	1967- 1968	1968- 1969	Average 1962- 1969	Average 1965- 1969
Rate of growth of gross domestic product at current prices	10.9	10.9	9.1	8.7	10.8	6.8	12.0	9.9	9.6
Rate of growth of gross domestic product at 1958 prices	8.5	8.4	5.1	5.0	7.6	3.3	7.4	6.5	5.8

TABLE A 2

GROSS DOMESTIC PRODUCT 1962 - 1969

(in millions of rands)

	1962	1963	1964	1965	1966	1967	1968	1969
Net National income at factor cost	4,906	5,480	6,066	6,630	7,213	7,989	8,510	9,460
Provision for depreciation	559	595	652	721	798	881	955	1,037
Indirect taxes	413	462	529	554	601	686	759	964
<u>Less subsidies</u>	44	47	55	62	78	98	102	110
Gross national Product at market prices	5,834	6,490	7,192	7,843	8,534	9,458	10,122	11,351
Net factor payments to the rest of the world	193	196	212	232	248	264	270	284
Gross domestic product at market prices	6,027	6,686	7,404	8,075	8,782	9,732	10,392	11,635
Real gross domestic product (1958 prices)	5,663	6,143	6,659	6,997	7,344	7,905	8,163	8,768.

Source: South African Reserve Bank, Quarterly Bulletin, March 1970.

TABLE A 3

SOUTH AFRICA: PERCENTAGE COMPOSITION OF THE GROSS DOMESTIC PRODUCT, 1947-66
(five-year averages)

	<u>1947-51</u>	<u>1952-56</u>	<u>1957-61</u>	<u>1962-66</u>
Agriculture, forestry, & fishing	16.6	15.9	12.9	10.8
Mining and quarrying	11.6	11.3	13.1	12.8
Manufacturing	16.5	18.6	18.9	21.2
Construction	3.1	3.2	3.1	3.3
Electricity, gas & water	1.8	2.0	2.4	2.6
Transport, storage & communication	9.8	9.6	9.9	9.7
Wholesale & retail trade	15.1	14.5	13.5	13.6
Financial services	2.9	3.2	3.4	3.7
Fixed property	4.0	3.8	4.2	3.9
General Government services	8.7	8.6	9.4	9.5
Other services	9.9	9.3	9.2	9.2
TOTAL	100	100	100	100

Source: South African Bulletin of
Statistics, 1968.

TABLE A.4

SOUTH AFRICA: GROSS DOMESTIC PRODUCT BY KIND OF ECONOMIC ACTIVITY 1961-1968

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
(in millions of rands)								
Agriculture, Forestry and Fishing	664	670	745	731	747	634	1,045	940
Mining and Quarrying	733	754	813	915	987	1,078	1,105	1,171
Manufacturing	297	1,142	1,256	1,428	1,544	1,737	1,887	1,959
Construction	151	155	178	228	288	313	349	365
Electricity, Gas and Water	134	144	157	169	183	199	226	254
Transport and Communication	512	554	613	677	710	759	663	909
Wholesale and Retail Trade	668	732	842	939	1,018	1,098	1,198	1,349
Financial Services	194	195	214	292	295	325	394	380
Fixed Property	218	230	243	266	282	304	333	361
Other Services	468	523	565	623	677	740	801	905
General Government	500	537	567	640	693	733	871	968
GDI at Factor Cost	5,260	5,604	6,214	6,869	7,514	8,180	9,032	9,641

Source: Bureau of Statistics. This table refers to the Republic of South Africa and Namibia (South West Africa).

TABLE A 6

SOUTH AFRICA: TOTAL POPULATION

(mid-1969 Estimate)

<u>Race Group</u>	<u>Number</u>	<u>Per Cent</u>
Africans	13,340,000	68
Whites	3,728,000	19
Coloureds	1,959,000	10
Asians	591,000	3
	<hr/>	<hr/>
Total	19,618,000	100
	<hr/> <hr/>	<hr/> <hr/>

Source: Bulletin of Statistics.

TABLE A 7SOUTH AFRICA: ECONOMICALLY ACTIVE POPULATION
(1960-1967)

<u>Race Group</u>	<u>1960 census</u> ^{1/}	<u>1967 estimate</u> ^{2/}
Africans	3,890,012	4,586,000
Whites	1,151,051	1,357,000
Coloureds	553,939	653,000
Asians	125,858	148,000

^{1/} Bulletin of Statistics, September 1968.^{2/} House of Assembly Debates (Hansard), 2 April 1968, col. 3208.

TABLE A 8

SOUTH AFRICA: URBAN POPULATION 1951-1968

<u>Race Group</u>	<u>1951</u> ^{1/}	<u>1960</u> ^{1/}	<u>1968</u> ^{2/}
Africans	2,390,586	3,471,233	4,300,000
Whites	2,088,551	2,574,651	-
Coloureds	750,577	1,030,858	-
Asians	284,663	397,023	-
Total	5,494,377	7,473,765	-

^{1/} Bulletin of Statistics. September 1967.

^{2/} London Times. Supplement on South Africa, 27 October 1969, p. VII.

TABLE A 9

SOUTH AFRICA: INCOME DISTRIBUTION 1969

	<u>Africans</u>	<u>Whites</u>
Per cent of total population	68	19.2
Per cent of all income received	18.8	74
<hr/>		
Monthly per capita income, (average)	7 Rand	95 Rand

Source: Financial Mail, Johannesburg, 18 April 1969, reporting on research by Market Research Africa.

TABLE A 10

SOUTH AFRICA AVERAGE MONTHLY SALARIES AND WAGES
IN DIFFERENT OCCUPATIONS, 1967 AND 1968

<u>ECONOMIC SECTOR</u>	<u>WHITES</u>	<u>COLOURED PERSONS</u>	<u>ASIANS</u>	<u>AFRICANS</u>
Mining (1967)	282.01	59.32	70.85	17.11 <u>1/</u>
Construction (First four months of 1968)	255.05	100.87	125.25	43.19
Manufacturing (First four months of 1968)	244.81	62.34	66.05	46.53
Public Service (1967)	149.17	52.69	66.16	23.58

Source : Survey of Race Relations in South Africa, 1968.

1/Plus free accommodation, food and certain items of clothing.

TABLE A. 11

SOUTH AFRICA: INCOMES AND EXPENDITURE
OF URBAN AFRICAN FAMILIES

Survey	Year	No. of Wage Earners per Household	Size of Family	Average Family Income	Minimum Essential Household Expenditure	Monthly Shortfall	Area
de Gruchy ^{1/}	1958	1.3	5	R39	R48.32	R9.32	Johannesburg
Suttner ^{2/}	1966	1.3	5	R46.31	R55.57	R9.26	Johannesburg
N.E.A.D. ^{3/}	1967	(a)	5	(a)	R53.32	R12.17	Johannesburg
B.M.R. ^{4/}	1967	1.9	5.4	R59.16	R63.89	R4.73	Port Elizabeth
-----	1967	1.9	5.4	R58.01	R63.89	R5.88	Uitenhage

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(a) The Non-European Affairs Department calculated on one earner per family, on which basis there was a shortfall of R12.57. It stated that 67.6 per cent of the families covered by the Survey had incomes below the poverty datum line.

- ^{1/} Cost of Living for Urban Africans, J. de Gruchy, Institute of Race Relations, 1960
^{2/} Cost of Living in Soweto, S. Suttner, Institute of Race Relations, 1967.
^{3/} Johannesburg City Council, Non-European Affairs Department, 1967.
^{4/} Bureau of Market Research, 1967.

Table compiled by A. Hepple in Workers Under Apartheid, London, 1969.

TABLE A 12

SOUTH AFRICA : BALANCE OF PAYMENTS 1961 - 1969
(in millions of rands)

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968*</u>	<u>1969*</u>
CURRENT ACCOUNT									
Merchandise Exports f.o.b.	931	952	1,017	1,083	1,064	1,199	1,298	1,495	1,490
Merchandise Imports f.o.b.	-1,022	-1,048	-1,302	-1,595	-1,823	-1,678	-1,974	-1,930	-2,200
<u>Trade Balance</u>	-91	-96	-285	-512	-759	-479	-676	-435	-710
Net Gold Output	576	632	688	736	775	768	773	769	847
Service Receipts	165	182	186	215	238	246	338	383	383
Service Payments	-447	-429	-467	-529	-589	-613	-698	-740	-783
<u>Total Goods and Services (Net Receipts +)</u>	203	289	122	-90	-335	-78	-263	-23	-263
Transfers (net receipts +)	-	19	26	34	41	65	77	113	103
<u>Balance on Current Account</u>	203	308	148	-56	-294	-13	-186	90	-160

SOUTH AFRICA : BALANCE OF PAYMENTS (Continued)

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968*</u>	<u>1969*</u>
CAPITAL MOVEMENTS									
Private Sector	-83	-64	-74	-41	162	160	235	372	74
Long Term	-40	-82	-136	-26	90	87	155	249	70
Short Term	-25	7	39	-31	31	51	14	33	-29
Errors and unrecorded Transactions	-18	11	23	16	41	22	66	90	33
Central Government and Banking Sector	-13	-56	13	8	96	-11	-66	74	19
Long Term	-6	-29	-14	-7	34	-62	-44	53	26
Short Term	-7	-27	27	15	62	51	-22	21	-7
<u>Total Capital Movements (Net Inflow +)</u>	-96	-120	-61	-33	258	149	169	446	93
CHANGE IN GOLD AND FOREIGN EXCHANGE RESERVES									
	107	188	87	-89	-36	136	-17	536	-67

1. Tables refer to the Republic of South Africa, Namibia, Lesotho, Botswana and Swaziland.

2. Published Customs figures for merchandise exports and imports are adapted for balance of payments purposes.

Source : South African Reserve Bank, Quarterly Bulletin, December 1969.

* preliminary

TABLE A 13

SOUTH AFRICA : EXPENDITURE ON GROSS DOMESTIC
PRODUCT, AT CURRENT PRICES, 1961-1969

(in millions of rand)

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966*</u>	<u>1967*</u>	<u>1968*</u>	<u>1969*</u>
Private Consumption expenditure.	3,585	3,786	4,094	4,603	5,014	5,497	5,900	6,489	7,186
Current expenditure by general government	575	666	739	823	930	1,077	1,139	1,247	1,457
Gross domestic fixed investment	1,096	1,081	1,296	1,595	1,944	2,090	2,249	2,318	2,613
Change in inventories	69	67	126	166	371	54	519	-20	286
Residual item	-91	-55	113	95	-81	-106	-104	2	72
Gross Domestic Expenditure	5,234	5,545	6,368	7,282	8,178	8,612	9,703	10,036	11,614
Exports of goods and non-factor services	1,630	1,717	1,845	1,977	2,010	2,141	2,319	2,545	2,632
<u>Less</u> Imports of goods and non-factor services.	1,208	1,213	1,527	1,855	2,113	1,971	2,318	2,298	2,611
Expenditure on Gross Domestic Product	5,656	6,027	6,686	7,404	8,075	8,782	9,704	10,283	11,635

Source : South African Reserve Bank, Quarterly Bulletin, December 1969 and (for 1969), March 1970.

* Preliminary

TABLE A. 14
 SOUTH AFRICA: INDICES OF PHYSICAL VOLUME
 OF PRODUCTION 1960-1968

	<u>Weights</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
MINING										
Gold	62.2	121.1	130.0	144.4	155.3	164.9	173.1	174.9	171.8	176.1
Other	.8	105.7	110.4	110.3	107.1	111.8	110.9	136.4	147.9	162.6
Total	100.0	116.2	123.3	136.6	139.3	148.2	153.3	162.6	163.1	171.0
MANUFACTURING										
Food	13.9	107.9	111.9	115.8	122.8	128.2	129.2	141.5	154.9	151.4
Textile, clothing etc.	12.6	115.3	130.2	136.0	147.3	166.9	178.4	182.2	191.3	192.7
Chemicals.	9.2	119.3	121.4	133.4	146.6	165.4	167.9	172.7	181.9	192.1
Non-metallic mineral products	6.1	106.3	101.0	101.5	114.4	140.3	159.3	167.9	165.8	169.5
Basic metals and metal products	18.9	110.2	114.2	120.8	143.6	166.0	183.5	184.9	198.8	204.5
Machinery including electric machinery	9.7	108.5	113.5	122.0	137.8	159.6	180.1	190.2	179.8	178.3
Transportation equipment	5.3	91.2	96.8	121.3	166.8	210.6	241.1	261.4	296.6	287.4
Other	24.3	110.2	116.7	125.7	144.7	169.7	179.8	200.8	218.0	240.2
Total	100.0	106.5	115.4	123.3	140.6	161.9	173.6	184.1	196.2	203.6

Source : Bulletin of Statistics.

TABLE A 15

SOUTH AFRICA : FINANCING OF GROSS
DOMESTIC INVESTMENT 1961-1969

(in millions of rands)

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966*</u>	<u>1967*</u>	<u>1968*</u>	<u>1969*</u>
Personal Saving	480	561	422	360	623	653	826	509	623
Corporate Saving	168	205	218	335	326	404	374	408	540
Current Surplus of General Government	187	131	335	359	352	277	505	524	539
Provision for Depreciation	533	559	595	651	720	797	877	947	1,037
Gross Domestic Saving	1,368	1,456	1,570	1,705	2,021	2,131	2,582	2,388	2,739
Net Capital Inflow	-96	-120	-61	-33	258	149	169	446	93
Change in Gold and Foreign Exchange Reserves	-107	188	-87	89	36	-136	17	-536	67
Gross Domestic Investment	1,165	1,148	1,422	1,761	2,315	2,144	2,768	2,298	2,899

Source : South African Reserve Bank, Quarterly Bulletin, December 1969
and (for 1969), March 1970.

* preliminary

TABLE A 16

SOUTH AFRICA: PUBLIC AND PRIVATE CORPORATIONS IN SOUTH AFRICA

<u>Company</u>	<u>Assets</u>	<u>Turnover</u>	<u>Year</u>
ESCOM	R 1,158 millions	R 130 millions	to December 1966
De Beers consolidated Mines	532	---	to June 1967
ISCOR	415	187	to June 1967
Anglo-American Corporation	355	---	to December 1966
IDC	299	---	to June 1967
African Explosives & Chemical Industries	180	116	to December 1966
SASOL	152	45 ^{1/}	to June 1967

Source : Top Companies, a Special Survey by The Financial Mail, Johannesburg, March 1968.

^{1/} Excluding sales of associated companies.

TABLE A.11

SOUTH AFRICA : SECTORAL GROSS FIXED
DOMESTIC INVESTMENT 1961-1969
(in millions of rands)

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966*</u>	<u>1967*</u>	<u>1968*</u>	<u>1969*</u>
<u>PRIVATE SECTOR :</u>									
Agriculture, Forestry, Fishing	112	114	122	131	132	141	155	160	162
Mining and Quarrying	143	115	115	140	149	150	174	184	196
Manufacturing & Constructions	154	157	209	327	400	442	445	359	339
Residential Building n.e.i.	102	87	111	152	195	194	233	238	313
Commerce, Transport & Finance	124	131	141	165	184	206	184	203	269
Transfer Costs	21	24	35	48	40	41	51	63	97
Sub Total	656	628	733	963	1,100	1,174	1,243	1,207	1,376
<u>PUBLIC SECTOR :</u>									
Central Government	175	169	219	255	383	371	381	445	466
Provincial Administration	82	87	104	125	151	167	183	205	241
Local Authorities	121	119	120	127	160	182	193	208	259
Public Corporations	62	78	120	125	150	196	250	253	271
Sub Total	440	453	563	632	844	916	1,007	1,111	1,237
Gross Fixed Domestic investment	<u>1,096</u>	<u>1,081</u>	<u>1,296</u>	<u>1,595</u>	<u>1,944</u>	<u>2,090</u>	<u>2,250</u>	<u>2,318</u>	<u>2,613</u>

Source : South African Reserve Bank, Quarterly Bulletin, December 1969
and (for 1969) March 1970.

1. Public Authorities include all Departments of the Central Government, Provincial Administrative, Local Authorities, the Administration of Namibia (South West Africa), Central and Local Authorities of Botswana, Lesotho and Swaziland and other Authorities.

* preliminary

II. THE EXTENSION OF THE FORCED LABOUR SYSTEM IN SOUTH AFRICA

37. Apartheid is the name given to the laws and customs which define the structure of South African society. That society is one of extreme inequalities. Whites, Africans, Asians and Coloureds have very different chances in life. These inequalities are obviously the result of the working of a particular kind of system, one which involves many different kinds of discrimination against non-whites. This is the way the system is usually seen, and from this point of view apartheid appears to be the institutionalized expression of racial antagonism. But it is much more than that.

38. Apartheid is a system by which whites are able to impose certain conditions of life and work on the vast mass of the population. It is a system of control. In order to understand this fact one must examine the origins of apartheid. These were succinctly described by the Transvaal Indigency Commission many years ago:

The early settler in the Transvaal and, indeed, the whole South-African-born White population up to nearly the middle of the nineteenth century, had grown to maturity in the belief that the normal and proper relation of White to Coloured (i.e. Non-White) was the relation of master to slave or serf. They regarded it as the natural province of the White man to supervise the native and direct his energies, and the duty of the native to perform for the White man the rough manual labour which was required for cultivating his land and tending his stock. Despite the abolition of slavery this tradition has remained and has continued to govern the relations between White and Coloured races to this day. ^{4/}

39. In the beginning, long before South Africa even began to industrialize, the superior power of whites was used to extract labour from the native Africans. Most of the laws and customs of the land had only one object; to secure a cheap and reliable supply of African workers for the whites. In the nineteenth century most of these workers were at first employed in agriculture. As the mining boom developed, however, increasing numbers of Africans were sent to work in the gold mines.

40. There were two elements in the embryonic system of apartheid around the turn of the century. The first was an element of compulsion. The white man made it exceedingly difficult for Africans and other non-whites to be economically independent. He engineered such drastic changes in their condition that they were compelled to work for him. There was no alternative. The second element, of course, was control. Wages, conditions of work, and so on, were determined unilaterally. Non-whites had no power, were given few rights, to influence the terms of their employment.

^{4/} Report of the Transvaal Indigency Commission, 1908, pp. 21-22

41. The early system of apartheid was, in other words, one which permitted whites to exploit others simply because they were able to dominate them. That was the initial meaning of white supremacy. But the way in which power was used reinforced white supremacy as time passed. The energy of the enormous labour pool gradually changed South Africa. The whites became rich, and the Africans remained poor. The meaning of white supremacy today is to be found not only in the ability of one race to control other races but also in the incredible difference of wealth and opportunity which separate the races. So far as whites and Africans are concerned, these are like the difference between life and death.

42. In its early stages apartheid was not a system at all. It was a crude and loosely articulated body of law and custom. It has that somewhat open quality of any informal social system. It was neither nationally organized nor all-embracing. It was an institution which was developing. And its development was at roughly the same stage as that of the economy for which it provided so much labour. The process of industrialization has changed that. The determination of the Government to "preserve the "South African way of life" has resulted in the systematic extension and rationalization of the apartheid system.

43. The process of industrialization set in motion many changes. It increased and changed the pattern of demand for labour. It brought millions of people to the cities. It tended to raise the level of wages. The Government has had to manage these changes in order to ensure that they do not disrupt the "South African way of life". As South African society changes, therefore, the Government found it necessary to extend apartheid and tighten its provisions. Control of the labour force at one time involved no more than the regulation of conditions in the reserves and white rural areas. In recent decades it has meant regulation of Africans in the industrial areas, and therefore the cities, as well.

44. Under the Nationalist Government, what was once implicit has been made explicit. And, in a sense, this was a necessity. The system of apartheid has had to develop along with the economy. It has had to be rationalized and refined. The Government has tightened its provisions and extended the whole system of regulations. This was the only way in which it could control more surely a much larger proportion of the non-white population. As the system has been made more exact, it has become easier to understand what it really is.

45. By the early 1950s it had become quite clear that apartheid was a system of forced labor. In 1953, the Ad-Hoc Committee on Forced Labour of the United Nations and the International Labor Organization found that "a system of forced labor of significance to the national economy appears to exist in the Union of South Africa". 5/ In 1957 the Ad Hoc Committee on Forced Labour examined the replies of the South African Government to the 1953 report. It found that the conclusions of the report were valid. It cannot be stressed too much that the report must serve as the starting point for any attempt to analyse the development of economic and social policy in South Africa in the last twenty years.

5/ International Labour Office, Report of the Ad Hoc Committee on Forced Labour (1953), p. 80, para. 375.

46. The Ad Hoc Committee on Forced Labour analyzed the working of the whole range of apartheid legislation. It examined the working of the pass laws, the provisions for labour contracts and the use of penal laws to obtain workers for farm colonies, work colonies, farms and prison farms. It came to the following general conclusions:

With regard to the economic aspect of its terms of reference, the Committee is convinced of the existence in the Union of South Africa of a legislative system applied only to the indigenous population and designed to maintain an insuperable barrier between these people and the inhabitants of European origin. The indirect effect of this legislation is to channel the bulk of the indigenous inhabitants into agricultural and manual work and thus to create a permanent, abundant and cheap labour force.

Industry and agriculture in the Union depend to a large extent on the existence of this indigenous labour force whose members are obliged to live under the strict supervision and control of the State authorities.

The ultimate consequence of the system is to compel the native population to contribute, by their labour, to the implementation of the economic policies of the country, but the compulsory and involuntary nature of this contribution results from the peculiar status and situation created by special legislation applicable to the indigenous inhabitants alone, rather than from direct coercive measures designed to compel them to work, although such measures, which are the inevitable consequence of this status, were also found to exist.

It is in this indirect sense therefore that, in the Committee's view, a system of forced labour of significance to the national economy appears to exist in the Union of South Africa. ^{6/}

47. There are two labour codes which apply to non-whites in South Africa. The first, which is the most severe, applies to Africans. The second applies to Asians and Coloured people who constitute a much smaller proportion of the population than the Africans. The disabilities of the Asians and the Coloured people are less severe and less uniform than those of Africans, though the aim of Government policy is the same towards all non-whites. For this reason, this section will focus exclusively on the situation of the Africans in South Africa though its conclusions apply to all the non-whites.

48. The system of apartheid today is not only much more extensive but also far more oppressive than it was in 1953. In the intervening years, Africans have been deprived of many rights which they once had and been subjected to new and harsher controls. The whites and Africans once lived separately and worked together. That arrangement has now been carried to its logical conclusion in the

^{6/} Ibid., paras. 372-375.

so-called policy of separate development. Africans have been reduced to a status which often makes physical survival problematic. They have no real rights, they have no opportunities to live and develop as human beings. Africans are allowed by the State and white society to exist only as labour.

49. The essence of the newly rationalized apartheid system is that it makes it impossible for Africans to be anything but cheap labour. This is done in two ways: Africans have been denied, first of all, the right of permanent residence in almost all areas but those designated by the Government as African "homelands". Since these areas are very poor and overpopulated, many of their inhabitants are forced to migrate to "white areas" in search of work. If they do not, they and their families may starve. In "white areas", Africans have no rights, no permanent status and no control over the terms and conditions of their employment. They are, in consequence, totally at the mercy of their employers and of the Government.

50. The history of the "Bantu homelands" begins with the struggle between native Africans and white settlers long ago. As white settlement was extended and consolidated by force of arms, the Africans were gradually restricted to small areas known as "reserves". By 1910, there were nearly 300 reserves, most of which were very small. But natives still had the right in most places to buy land without any restrictions. This situation changed in 1913 with the passage of the South African Trust and Land Act, No. 27 of 1913. This Act fixed a legal limit to the land which Africans might possess. African reserves were ultimately fixed at 13 per cent of the land, and Africans were prohibited from owning land which was not "scheduled" for them under the new Act.

51. Various attempts were made after that to enlarge the native reserves. Land was added to that already "scheduled" for Africans. The reserve areas were re-defined. Land was acquired in "release" areas by the Bantu Trust for future use by Africans. And many non-whites, especially in the Cape Province, lived outside the areas designated as reserves. But the basic principle of restricting the area of land ownership by Africans remained. With the accession to power of the Nationalist Government in 1948, this principle became one of the foundations of the policy of apartheid. And in 1964 the reserves were finally grouped into Bantustans constituting approximately 13.7 per cent of the land. This is now, with some small exceptions, the only area of legal and permanent residence for nearly 70 per cent of the total population.

52. The Government claims that Africans are not citizens of South Africa but of the tribal "homelands" which it has created for them. And it has pursued a policy, over the last years, of removing Africans from "black spots" within European areas to these "homelands" or to so-called "transit camps". Up to the beginning of 1968, 73,000 people comprising 193 African communities had been removed from their previous rural settlements and sent to the reserves. Another 276 communities were scheduled for removal.^{7/}

^{7/} International Labour Office, Fifth Special Report of the Director-General on the Application of the Declaration Concerning the Policy of Apartheid of the Republic of South Africa (Geneva, 1969), p.8.

53. Thus the Government is attempting to enforce an absolute legal separation of the races. At present, 5,100,000 Africans or only 40 per cent of the total African population, live on the reserves. But even this figure is by no means a measure of the success of failure of apartheid policy. The real meaning of the success of that policy, once the legal separation of the races is established, is to be found in the conditions under which people in the reserves live. It is these conditions which compel Africans to offer their labour on the "market".

54. The reserves are, first of all, very poor agricultural areas. The Tomlinson Commission found in 1954 that 30 per cent of the land set aside for reserves was badly eroded. Another 44 per cent was found to be moderately eroded.^{8/} The situation of the Transkei, the largest reserve in extent and population, is typical. Its economy is based almost entirely upon subsistence agriculture. In 1964 most of the arable land there was under maize. But average yields were very low. Carter states that Africans were simply not able to produce enough for their needs. ^{9/} The land cannot support the people who must live on it.

55. The condition of the reserves, furthermore, has been steadily deteriorating. The Tomlinson Commission reported in 1954 that over the preceding 20 years the real income produced in the reserves had remained almost unchanged.^{10/} Since the time of the Commission's report, the real income of the inhabitants of the reserves has fallen still more. ^{11/} Clearly, population growth over the last 35 years has been fairly substantial. The end result of these trends, therefore, must have been a considerable fall in per capita income. The reserves never offered much promise of progress to Africans but under the Nationalist Government, they have become increasingly impoverished.

56. Investigations into the poverty of the reserves have stressed the need for diversification and industrial development in order to raise living standards. The Tomlinson Commission, however, calculated that such progress would be possible only if half the population of the reserves were moved off the land. The reserves were then already so overpopulated as to make development exceedingly difficult. Later authorities have estimated that closer to two-thirds of the inhabitants would have to be removed to make progress possible. ^{12/} By removing more and more people to the reserves, the South African Government has been aggravating a situation which was critical 25 years ago.

57. The Government has shown no interest in improving conditions in the reserves. The situation of those living on them may be tragic, but that is precisely what the Government wants. The point of the Bantustan policy is to make it impossible for the mass of Africans who are supposed to live in the "homelands" to gain a livelihood there. People living in the conditions which prevail in the reserves will be perennially on the border of starvation. Many undoubtedly do die from starvation and diseases related to malnutrition. The men of the reserves, and many women, are therefore driven out by necessity to seek work in "white areas".

^{8/} U.G. 61/1955, p. 51.

^{9/} G. Carter, T. Karis and N. Schultz, South African Transkei: The Politics of Domestic Colonialism (London, 1967), p. 79.

^{10/} U.G. 61/1955, p. 99.

^{11/} House of Assembly Debates (Hansard), 3 February 1969, col. 16.

58. When they go out, however, they venture into a world in which they have almost no rights of any kind. They become migrants without rights in their own country. South Africa has therefore created a gigantic reserve army of labour by imposing upon the mass of the population economic conditions which, in many cases, are tantamount to a sentence of death. The Government is not really interested in "separating the races". It is interested in securing a cheap labour supply, and by any means necessary to attain that end.

59. Whatever their de jure status, however, the majority of Africans have to live in "white areas". They are allowed to do so because their labour is needed. South African society would collapse without African workers, for Africans provide nearly 70 per cent of the labour force in the economy. The number of Africans outside the reserves, however, is now being kept to an "essential minimum", determined by the labour requirements of the economy. The Government has made it quite clear that it intends to expel all Africans who are not economically active from the "white areas." 13/

60. In reality, the policy of apartheid is thus one of maintaining a delicate balance in the distribution of the African population. Those who are needed stay where they are needed; those who are not needed are sent to the reserves. The restriction of Africans to legal residence in the Bantustans only is clearly basic to the working of the whole economic system. The second principal element of apartheid is the set of laws and regulations by which Africans living in "white areas" are reduced to almost complete helplessness. These deny Africans the most fundamental rights. This "modernized" system of controls operates in three main spheres. It regulates the movement and residence of Africans; it denies them the right to participate in almost any kind of union organization or activity; it denies them access to education and training.

61. The rights of Africans to move to "white areas", and to stay in them, are restricted and closely controlled, notably by the Bantu (Urban areas) Act of 1945, as amended, and by the Bantu Laws Amendment Act of 1964. These measures decree, inter alia, that no African may be in an urban area for more than 72 hours without certain special qualifications or a job. Nor may he enter an urban area without already having obtained a contract of employment from a Government labour bureau. Africans residing in "white areas" must apply for permits to continue staying in them, and such permits may be refused in the event of a surplus of African labour in any given area. Africans considered unnecessary in "white areas" may be removed from them. Each year, thousands of Africans are "endorsed out" of urban areas to the reserves. 14/

62. All Africans over the age of 16 must carry reference books containing the details of their employment. These must be produced on demand. No African may be employed without such a book, and the details of each book are registered in the Bantu Affairs Central Reference Bureau of the Department of Bantu Administration and Development. 15/

13/ Speech by G. F. van L. Froneman, Deputy Chairman of the Bantu Affairs Commission, May 1968, cited in 1968 Survey of Race Relations (Johannesburg) pp. 166-167.

14/ House of Assembly Debates (Hansard), 7 May 1969, col. 4766. Between November 1967 and April 1968, an average of 1,400 Africans were endorsed out of Johannesburg every month.

15/ Bantu (Abolition of Passes and Co-ordination of Documents) Act, No. 67 of 1952, as amended.

63. Africans in the "white areas" who are unemployed, who have left their jobs illegally, or who have been refused permission to remain in them may be classified as "idle" or "undesirable" persons. Such persons may be arrested without warrant and sent to a work colony for up to three years. ¹⁶ Furthermore, African prisoners may be hired out to white employers. In some areas, especially food-producing areas where labour is in short supply, white farmers are permitted to form their own associations to build prison farms. They may then use convict labour to work these farms. ¹⁷

64. A national system of government labour bureaux has been set up to implement movement controls, to register African workers, to send them wherever their labour is needed and to enforce the vagrancy laws. All unemployed African males over age 15 must report to a labour bureau. And employers in general may employ only Africans who are registered with these bureaux. Africans failing to report to labour bureaux may be arrested without warrant and removed from any area. Africans may not take employment without the permission of a bureau but a bureau may refuse to permit the continued employment of an African worker. It may also cancel existing contracts of employment. If an African refuses to accept a job offered to him, he may be dealt with as an "idle" or "undesirable" person. The labour system is thus run on the principle that Africans must do what they are told or suffer the consequences.

65. African workers are also deprived of freedom of association and elementary trade union rights. The basic instruments of discrimination and control in this sphere are the Industrial Conciliation Act, No. 11 of 1924 and No. 28 of 1956, as amended; the Bantu Labour (Settlement of Disputes) Act, No. 48 of 1953; the Suppression of Communism Act, No. 44 of 1950, as amended; and the Bantu Labour Regulation Act, No. 15 of 1911 and No. 67 of 1964, as amended. The essential features of these laws are as follows:

- (a) African trade unions are barred from legal recognition and legal rights;
- (b) strikes by African workers are illegal, punishable by a fine or up to \$1,400 or three years in prison;
- (c) breaches of contract by African workers are a criminal offence;
- (d) African workers are prohibited from membership in registered trade unions;
- (e) African workers are excluded from the negotiation of industrial agreements which may be applicable to them.

66. The freedom of African workers to organize is also seriously restricted by certain sweeping provisions in the Suppression of Communism Act, No. 44 of 1950 and the General Law Amendment Act, No. 76 of 1962. The former defines "communism"

¹⁶ As provided in the Bantu (Urban Areas) Amendment Act, No. 43 of 1945, as amended; the Work Colonies Act, No. 25 of 1949; and the Bantu Laws Amendment Act, No. 42 of 1964.

¹⁷ International Labour Office, Report of the Ad Hoc Committee on Forced Labour (1953), p. 404.

in such a wide sense that it can be invoked in the case of virtually any strike by Africans. Its violation constitutes a serious criminal offence. The latter defines sabotage to include any obstruction of the supply and distribution of light, power, fuel, food, water, postal, telephone and telegraph services, the free movement of traffic, or the property of any person or of the State. This is so loose as to be applicable, again, in case of almost any strike by Africans. Violations of the above can carry the death penalty. At the beginning of 1969, nearly 1,000 Africans were in jail under these two laws. ^{18/}

67. The African trade union movement has been virtually hounded out of existence by the Government. As a result, only about half of one per cent of the economically active African population is organized. There have been no major strikes by African workers in the last decade. ^{19/} Out of an industrial labour force of well over a million, the number of African workers officially listed as having been on strike was a mere 10,050 in 1956. That figure fell to 5,500 in 1960 and then to 3,531 in 1967. ^{20/}

68. Africans are also denied access to education and professional skills, and those with skills are denied skilled and responsible work. The control of African education is centralized in the hands of the Government under the Bantu Education Act, No. 47 of 1953. This Act also pegged Government expenditure on African education at a fixed annual amount. While the proportion of State expenditure on education as a whole remained fairly constant between 1950 and 1963, the proportion of it devoted to African education has fallen from 0.57 per cent in 1953 to 0.396 per cent in 1966. ^{21/} Per capita Government expenditure on African education also fell from R 17.1 (\$13.94) in 1953-54 to R. 11.5 (\$16.10) in 1962-1963. It remained at about R. 12 (\$16.80) for the rest of the 1960s. Real per capita expenditure on African education is now considerably below the 1950 level. ^{22/}

69. African enrolment in primary schools has increased but the proportion of school-age Africans in primary school is small. It was 3.4 per cent in 1953 and roughly the same percentage in 1966. ^{23/} Most of these pupils furthermore were concentrated in the lower forms. In 1962, 44 per cent of Africans in school were in the two lowest classes of primary school, while only 2.9 per cent were in any of the five forms of secondary school. ^{24/} In 1967, 71 per cent of all Africans in school were in the four lowest primary classes. ^{25/} The dropout rate is clearly very high. The vast majority of Africans are getting only the most rudimentary education.

^{18/} House of Assembly Debates (Hansard), 30 May 1969, col. 6948.

^{19/} See "A study of apartheid and racial discrimination in southern Africa" (E/CN.4/949), p. 119.

^{20/} South African Bureau of Statistics, 1968, p. H-58.

^{21/} See E/CN.4/949, p. 149.

^{22/} H. Horrell, Bantu Education up to 1968 (Johannesburg, 1968), pp. 38-39.

^{23/} See E/CN.4/949, p. 154.

^{24/} H. Horrell, "Some Educational Statistics", South African Institute of Race Relations Research Paper (Johannesburg, 1965), p. 6.

^{25/} H. Horrell, Bantu Education up to 1968, pp. 51-52.

70. The conditions of African schooling are inadequate in every respect. School is free and legally compulsory for whites; it is neither for Africans. African high school pupils, for instance, must pay well over R.30 (\$42) for fees, uniforms and books. There is a serious shortage of teachers, who are badly paid and poorly qualified. There is also a shortage of schools, and existing schools have to work double sessions. It is officially estimated that Soweto, Johannesburg's African town complex, is in need of approximately 60 schools. 26/

71. Conditions in higher education are no different. Very few Africans are able to enter higher education. In 1968, the non-whites, who comprise approximately four-fifths of South Africa's population, furnished less than 12 per cent of its university students. 27/ Since 1959, the universities in South Africa have been segregated. The facilities in the non-white colleges are very different from those in the white universities and inferior in quality. Limited opportunities and inadequate facilities make it very hard for Africans to complete a higher education course successfully. In the academic year 1968-1969, 10,740 higher education degrees and diplomas were awarded to whites. Two hundred and seventy-seven were awarded to Africans. 28/

72. Access to vocational and technical training for Africans is also severely restricted. This is partly the result of the restrictive practices of the white trade unions, who fear competition from Africans with higher qualifications, and also the result of deliberate Government policy. The Government is unwilling to spend the amount of money that would provide even a small fraction of Africans with the chance of acquiring higher skills or technical education. The facilities available for Africans are very limited. Those that are available are inadequate. The number of whites attending vocational and technical schools is now roughly 100,000. The number of Africans in such schools is little more than a few thousand. 29/

73. The nature of the Government's intentions is most clearly and simply revealed in the statistics for per capita expenditure in education for the children of different races. In 1968, the Government was spending the following amounts:

	<u>per capita expenditure</u>
White children	R. 114.1 (\$159.74)
Coloured and Indian children	R. 74.5 (\$104.30)
African children	R. 13.5 (\$18.90)

These figures are the reflection of a deliberate policy, as is the whole discriminatory structure of education which has been reviewed briefly above. Africans are being prevented from acquiring education, advanced skills and professional qualifications. The door of opportunity is closed to all but a very few. One can only

26/ Report of the Bantu Education Department to the Johannesburg City Council, as reported in The Star, Johannesburg, 19 May 1969.

27/ Cape Argus, 16 April 1969.

28/ House of Assembly Debates (Hansard), 13 May 1969, col. 5834.

29/ See E/CN.4/949, p. 157.

conclude that this is the basic purpose of the Government's education policy. It prepares Africans for the role which white society wants them to assume, that of unskilled labourers.

74. The educational system thus offers Africans almost nothing. Even for those who do manage to reach university or technical training school, it will be difficult upon graduation to do anything with the acquired skills or knowledge, for Africans are barred from most skilled jobs in South Africa. The mining industry has had various kinds of colour bars for decades. The Nationalist Government added a colour bar in the building industry in 1951. It established a general colour bar by adding a section to the Industrial Conciliation Act, No. 28 of 1956, which gave the Minister of Labour the power to bar anyone from any job because of his race. The purpose of this new section 77 was to provide a "safeguard against inter-racial competition".

75. Under the 1956 provision, the Minister of Labour may direct the Industrial Tribunal, which is a body of five appointed by the Government, to investigate any undertaking, industry, trade or occupation and to make to him a recommendation on the desirability of establishing a colour bar. The Minister may then decide to do any of the following which will take legal effect. He may:

- (a) prohibit the replacement of workers of one race by those of another;
- (b) reserve any class of work or specific jobs for members of a specified race;
- (c) compel employers to maintain a fixed percentage of workers of a particular race;
- (d) fix maximum, minimum or average numbers or percentages of persons of a particular race who may be employed in any place of employment.

The Government thus has the power to establish a colour bar anywhere in employment. But it also has the power to grant exemptions. This makes it possible for the State to direct labour wherever it is needed, and also gives it a weapon which it may use against employers.

76. The first colour bar under the new system was established in 1957. Since then statutory discrimination in employment has been established in 23 other industries and occupations. These affect some 105,000 workers. The Minister has said that 513 individuals have been granted exemptions. General exemptions affecting 300 workers have also been granted.^{30/} It has sometimes been argued that such exemptions are a sign that the colour bar is breaking down. There is no doubt that under the pressure of a real shortage of skilled labour, Africans have been allowed to work at some jobs previously barred to them, but wage scales have been downgraded as well. In addition, most exemptions have been granted on a temporary basis, and only 3 per cent of the total labour force has been affected. The colour bar is still very much in force.

^{30/} House of Assembly Debates (Hansard), 5 April 1968, cols. 3453-3543.

77. It should now be clear that apartheid is not simply a reflection of racial antagonism on the part of whites. It is a system by which the white community controls the vast majority of the population. And this system of controls is brutal and totalitarian.

78. Africans are forced to live on reserves but cannot, in practice, survive there. The Bantustans cannot possibly support even a fraction of all their de jure "citizens". The pressure of poverty and the lack of jobs forces Africans to seek work in "white areas". In those areas, their movements, indeed their lives, are regulated in minutest detail. Africans are literally compelled to take whatever work they are deemed fit for. They are compelled because their only alternatives to accepting such work are to return to the reserves or to go to prison. Africans are denied education and the opportunity to acquire advanced skills. Very few have any chance of moving up the occupational ladder. As workers, they are denied the opportunity of skilled work for which they have the requisite training and experience. They have no right to bargain collectively, no right to strike, no right to take any kind of collective action. In the only areas where they have a chance of economic survival, Africans are migrants without any rights.

79. Thus Africans are given no alternative to joining the vast pool of unskilled workers which provides most of the labour for the South African economy. They are compelled to join that pool by the two blades of the apartheid policy. The Government's Bantustan policy forces them to leave the reserves. Influx controls, work regulations and the like force them to accept whatever work is offered. Apartheid is therefore a system of forced labour, and forced labour is cheap labour. African workers in South Africa are quite defenceless and have no means of ensuring that they receive adequate and fair wages.

80. Under the Industrial Conciliation Act, an African is not an "employee". He is thus excluded from membership in trade unions and denied the right to participate in collective bargaining. Wage agreements are made with employers by the white minority of workers. The Minister of Labour gives legal force to these agreements and African workers are bound by their terms. They must inevitably suffer under such a system. Those who negotiate agreements on their behalf are in direct competition with them for shares of the wage bill. And South Africa is a society in which large differences in the income of Africans and whites are regarded as "normal and proper". White workers can hardly be expected to press vigorously for increases in African wages.

81. Wages are also fixed by the determinations of a Wages Board. This Board was originally established in 1925 under the Wage Act, No. 27 of 1925, which gave all workers the right to obtain an investigation into their working conditions and wages. The Government abolished this right in 1957 and changed the law so that the Wage Board could undertake an investigation only when ordered to do so by the Minister of Labour. The Minister has absolute authority to decide what to do about the recommendations of any inquiry which he may have ordered. He may approve a recommendation or ignore it. If he approves it, and publishes it as a wage determination in the Government Gazette, it becomes binding on employers and employees. Between February and September 1968, the Minister published 9 such wage determinations. These set weekly minimum wages in different industries at between R. 4.7 (\$6.58) and R. 11.6 (\$16.24).^{31/}

^{31/} A. Hepple, Workers Under Apartheid (London, 1969), p. 55.

82. Under this system, Africans receive the lowest possible wages. As has already been indicated, those wages are in many instances inadequate even to provide subsistence for a typical urban African family. The average monthly earnings for different races in several industries in 1968-1969 were as follows:

<u>Industry</u>	<u>Whites</u>	<u>Coloured</u>	<u>Asians</u>	<u>Africans</u>
Mining	R.297	62	76	18
Building construction	282	98	135	45
Wholesale trade	245	171	94	48
Retail trade	130	51	82	38
Banking	205	56	72	53
Public service	211	100	127	36
Provincial administration	198	49	67	32
Local authorities	230	71	50	38

Source: 1968 Survey of Race Relations in South Africa (Johannesburg), pp.104-108

All the wages paid to Africans in these industries at the time were well below the minimum essential household expenditure for an urban African family in 1966 and 1967. ^{32/} The whole wage determination system therefore leaves the large majority of Africans in a situation of dire need even in the cities and industrial areas.

83. The wages paid to Africans are exceedingly low and only a fraction of wages paid to white workers for doing similar jobs. The skill differentials between Africans and whites are much larger than the differentials in any other country. They are as large as they are, in other words, simply because of discrimination against Africans. In mining, white workers earn more than fifteen times as much as Africans. In some industries, they earn only six or seven times more. But the differences in every industry are enormous and there is evidence that the wage gap is growing all the time. African labour is cheap, therefore, in a very simple and straightforward sense. If Africans were paid as much as white workers, and if skill differentials were narrowed, the wage bill of the typical large employer would rise astronomically. "Labour" would become more expensive. The operation of the typical commercial enterprise in South Africa is therefore much less expensive now than it would be if the wages of Africans were determined in the same way as the wages of whites.

^{32/} A. Hepple, op. cit., p. 54.

84. It is sometimes argued that African labour is not in fact cheap. Those who urge this view usually mean one of two things. They may mean, first of all, that keeping Africans poor ultimately impoverishes the whole community. The talent and energy of the African population are wasted, and that is naturally a loss to everyone. The second argument is that, by paying low wages to Africans, the white community is restricting the domestic market. This is a hindrance to growth in the long run. While both of these views are correct, that does not change the fact that white South Africans seem to have a strong preference for living in the short run. As it is now, the system gives them privileges and prosperity. Whites would not themselves be so prosperous if Africans received a significantly larger share of the national income.

85. Since the end of World War II, the whole system of forced labour has been extended and made more "efficient". It should be understood that this was inevitable. Once the Nationalists had taken power, no other path of social development was really possible, for the Nationalists have always been obsessed with preserving the "South African way of life". The essence of that "way of life" has always been the domination and exploitation of the non-white races. The process of industrialization is a kind of explosion of energy. In a South Africa clinging to its old "way of life", this energy was bound to be used in the way it always has been, to benefit the few. The process of industrialization, of course, makes many demands on society. It tends to disrupt old ways of life. But the process has been managed by the Nationalist Government. Social and economic changes have taken place within the framework of old institutions. As the economy became more efficient, so did apartheid. That is why industrialization is not changing the condition of the non-white population.

III. SOUTH AFRICA'S FOREIGN TRADE

86. South Africa has an "open" economy. The value of both imports and exports is high, each equal in value to roughly one quarter of the gross domestic product. This is not unusually high for a country as rich as South Africa. But for a country which is in open conflict with the community of nations any significant dependence on world trade is bound to present a problem, if only a potential one.

87. South Africa is in fact rather more dependent on world trade than these figures would indicate. There are many countries with a volume of trade which is as important. Many of them, however, could produce substitutes for the goods which they import. In some cases, they could redirect their exports to the domestic market. South Africa is not in such a fortunate position. Its exports cannot be marketed at home. And most, or many, of its imports are irreplaceable. Qualitatively speaking, it is highly dependent on world trade.

88. One of the main aims of the original policy of forced industrialization was to reduce South Africa's economic dependence on Great Britain. That aim has in large measure been achieved. Britain is still South Africa's main trading partner, but trade with other countries has now reached very high levels and is of considerably greater importance. Trade with the United States, West Germany and Japan alone is now approximately 20 per cent greater in value than trade with Great Britain.

89. South Africa's dependence upon imports is not as great as it once was. In 1947, shortly after World War II, the percentage of imports in the gross domestic product was 31 per cent. Imports continued to grow fairly rapidly since then in absolute terms, but total production grew much more rapidly. South Africa also encouraged import substitution in order to achieve greater self-sufficiency. The result of growth and of Government policy was that the proportion of imports in the gross domestic product fell to 20 per cent by 1967. (See table B 1.)

90. Export industries have always played an exceedingly important role in the South African economy. In the years after World War II, when the world economy was expanding rapidly, South Africa became heavily dependent on export markets. It was significantly more dependent on world markets in 1957, when nearly 30 per cent of production was going overseas, than it had been in the period immediately after the war. This dependency has been somewhat diminished in recent years but it is difficult to see how South Africa could afford to lose an important part of its overseas markets. Even a 50 per cent contraction in exports would undoubtedly create severe economic dislocation.

91. In recent years, the trend has been for imports to expand much more rapidly than exports. South Africa has consequently incurred serious trade deficits. The balance of trade was negative throughout the last decade. The acceleration of economic growth in 1968 and 1969 has now very much increased the pressure on imports. By the last quarter of 1969 the trade gap had reached a level of just under R.900 million (\$1,260 million). (See table B 3.) This is a crisis level.

92. The balance of payments situation is actually even more serious than the trade figures seem to suggest. For in addition to the growing trade gap, South Africa has had a substantial deficit on its services account. Service payments have been growing much more rapidly than receipts for services. (See table A 12.) Since South Africa also exports some capital, the balance of payments is very weak. The basic source of this weakness is the current account.

93. The balance of payments position is made especially precarious by the fact that gold production generates approximately 35 per cent of all exports revenues. South Africa needs to export important quantities of gold to central banks and to the world money market. This is the one single factor which keeps the pressure on the balance of payments from becoming impossible. If the gold mining industry should encounter difficulties in production or marketing, South Africa would be confronted with a major economic crisis.

94. South Africa's foreign exchange requirements are rising very rapidly. The country cannot possibly expand its overseas sales with sufficient speed to close the gap very much. The Government must consequently be under considerable pressure to find other means of relieving the pressure on the balance of payments. The only attractive alternatives, for a country committed to rapid expansion, are import controls or foreign loans.

95. The composition of South Africa's trade has changed in important ways in the last twenty years. As the economy became more industrialized, it became somewhat more self-sufficient. Yet South Africa has not been able to make itself economically independent. This is particularly obvious when one looks at the way in which the pattern of trade has changed.

96. South Africa has been able to substitute domestic products for many imported goods. Most of the goods for which substitutes could be produced domestically, however, have been consumer products or intermediate goods. Consumer products have a fairly low import content of 6 to 8 per cent. South Africa has not been able to reduce the import content of investment goods by any significant amount. Most goods of this kind, such as machinery and equipment, have an import content of roughly 50 per cent.

97. The economy's great success from the point of view of the trade balance has been to reduce the import content of consumer expenditure. But this trend has been more than offset by two other factors. Economic growth has been very rapid, and this has increased the demand for imports. At the same time, there has been a very important shift to import intensive production in the economy. The extraordinary expansion of investment has thus caused a considerable rise in the demand for foreign exchange to purchase capital goods.

98. It should also be noted that South Africa is becoming increasingly dependent on the importation of raw materials. These increased from 9 per cent of total imports to more than 13 per cent of the total in the ten years up to 1966. (See table B 5.) It is quite likely that this trend has continued more recently. The need for imported raw materials adds again to the demands for foreign exchange.

99. From the point of view of the balance of payments, the growth of the economy has been a mixed blessing. In some sectors it has been possible to reduce foreign exchange requirements. Changes in the pattern of production, however, which are a normal concomitant of growth, have increased them. South Africa has thus shifted from one kind of import dependence to another.

100. By the mid-1960s South Africa was also becoming an important exporter of processed and manufactured goods. Its principal exports after World War II were agricultural products and unprocessed raw materials. As industrialization proceeded, the relative importance of these goods declined. In the ten years after 1957, the percentage of manufactured goods in South Africa's exports rose from 43 per cent to nearly 58 per cent. (See table B 4.) In that same period, agricultural and fishing exports declined from 29 per cent of the total to 18 per cent.

101. Most of South Africa's new exports have been semi-manufactures or processed raw materials. They were the products of the much larger industrial system which South Africa has been building since the end of World War II. That industrial system is not yet capable of producing large quantities of sophisticated and costly manufactures for export, but it may not be long before it is able to do so. South Africa is already beginning to ship such goods to less developed countries.

102. The changes in the structure of trade over the last twenty years have been significant. They reflect the new problems and the new possibilities confronting South Africa. They confirm what has already been said about the remarkable speed with which South Africa has industrialized. They show more than anything else that the idea of economic independence is a will o' the wisp.

103. The figures for imports by SITC sections provide a more precise indication of South Africa's new import needs. In 1959, two categories, manufactured goods by materials and machinery and transport equipment, accounted for the bulk of South Africa's imports. From that year to 1968, total imports rose by approximately R900 million (\$1,260 million). Nearly R500 million (\$700 million) of this increase was accounted for by machinery and transport equipment alone. Such figures suggest that South Africa is critically dependent upon its main trading partners for the hardware needed to ensure continuing industrial expansion. (See table B 8.)

104. The country has also been importing important quantities of miscellaneous manufactured goods, mineral fuels and chemicals. Imports in these categories have increased by between 65 and 125 per cent over the last ten years. (See table B 8.)

105. Imports by South Africa in the principal product groups of importance to the economy in 1964 and 1968 were as follows:

	<u>1964</u>	<u>1968</u>
	(in millions of rand)	
Non-electrical machinery	302	378
Transport equipment	242	307
Electrical machinery	90	141
Textiles, yarns, etc.	151	133

	<u>1964</u>	<u>1968</u>
	(in millions of rand)	
Petroleum and petroleum products	91	123
Miscell. manufactured goods	40	57
Professional and sci. equipment (incl. optical, watches, clocks)	34	57
Iron and steel	43	53
Chemical elements and compounds	26	49
Manufactures of metal, n.e.s.	40	50

Source: Monthly Abstract of Foreign Trade Statistics

106. One further fact about South Africa's imports needs mention. The country must import more than 15 per cent of its total energy requirements. In fact, net imports of fuel have doubled in recent years. This is due almost entirely to the very large rise in the consumption of crude petroleum and to substantial increases in the consumption of fuel oils. South Africa has no crude petroleum, although it has considerable refining capacity. The SASOL facilities can provide for some requirements by converting coal to oil. But as oil consumption rises, most domestic needs must be met by overseas purchases. (See table B 6.)

107. There is a great deal of exploration for petroleum now going on in southern Africa. South African companies are very closely involved. In the immediate future, however, and for a long time to come, South Africa is likely to find it difficult to set up an oil industry which can provide for all domestic needs. Even in the event of a remarkable oil strike, time would be needed to bring production up to the required levels. The country has, however, stockpiled a certain amount of petroleum and this might see it through a lengthy crisis.

108. South Africa's exports have been increasing steadily over the last decade. Between 1960 and 1969, they rose by between 50 and 75 per cent, depending on whether one uses the customs and excise estimates or those of the monetary authorities. By 1968, exports had risen to a level of R1,502 million (\$2,103 million). The most important increases took place in two categories: manufactured goods by materials and food and live animals. Exports of the latter have risen by approximately 150 per cent over the 1959 level. Exports of manufactured goods by materials have risen astonishingly over the last ten years. In 1959 they were valued at R179 million (\$251 million). By 1968 they had risen to R461 million (\$645 million). (See table B 7.)

109. South Africa also exports significant quantities of crude materials, machinery and transport equipment, mineral fuels and chemicals. In 1968 these exports accounted for roughly 35 per cent of the total.

110. Shipments in the principal product groups destined for foreign markets in 1964 and 1968 were as follows:

	1964	1968
	(in millions of rand)	
Non-metallic mineral manufactures	100	198
Non-ferrous metals	47	139
Fruit and vegetables	100	125
Cereals	62	122
Crude textiles fibres	133	116
Metalliferous ores and scrap	104	75
Petroleum and petroleum products	29	53

Source: Monthly Abstract of Trade Statistics

111. The most important increases have been in the export of semi-manufactures. But exports of more sophisticated products, although still relatively small, have been increasing rapidly. Exports of machinery and transport equipment, for instance, increased by nearly 200 per cent between 1964 and 1968. (See table B 7.) As the South African economy continues to expand, it will need to export increasing quantities of such products.

112. The bulk of South Africa's trade is with European countries. Europe buys more than half of South Africa's exports and it provides more than half of its imports. Trade with North America is rather less important. Trade with Asia is growing rapidly, largely owing to the increasingly important links with Japan. Trade with Africa constitutes roughly 12 to 15 per cent of the total, and that too is growing rapidly. (See table B 9.)

113. Britain remains South Africa's main trading partner. It purchased roughly one third of South Africa's exports and supplies just under 25 per cent of its imports. The United States is the second most important trading partner. It supplies approximately 20 per cent of South Africa's imports. West Germany and Japan rank third and fourth respectively as major trading partners.

114. Important changes have been taking place in the direction of trade during the last fifteen years. Britain once dominated the South African trade absolutely. Its position now is rather less important. South Africa's trade with the Common Market countries has been increasing with remarkable speed. By 1968 Common Market exports to South Africa exceeded those of Great Britain. Common Market imports were well below the British level. United States trade with South Africa has also been increasing rapidly.

115. By far the most important increases in trade with any individual country have been with Japan. Japan's exports to South Africa have increased steadily. It has increased its imports from South Africa very rapidly in order to meet its great need for raw materials. In 1964 Japan's imports from South Africa stood at \$118 million. By 1968 they had risen to a value of \$286 million. (See table B 10.)

116. What is striking about South Africa's trade with all these countries is that it has grown steadily, and in a number of cases very rapidly. For officially, South Africa has been subjected to a trade boycott by the United Nations. This appears to have had little restraining influence on most countries. The exceptions, perhaps, are to be found mainly among the African countries. For a long time, trade with African countries outside the southern bloc was quite limited. In the last few years, however, even that trade has been growing rapidly, as will be seen later.

117. Most of South Africa's trade is with developed countries which export fairly expensive manufactured goods and import less expensive raw materials and semi-manufactures. South Africa consequently has an unfavourable trade balance with its important trading partners. The major exception is Japan, with which it has a substantial favourable balance. South Africa's trade balance with these countries is clearly a reflection of the differences in the level of technical development between itself and its major trading partners. It also indicates, once again, how much it needs to trade with those countries.

118. None of South Africa's principal trading partners need that country's goods or markets in anything like the same sense. Imports and exports are crucial to the functioning of the South African economy. And trade, especially trade in capital goods, is concentrated among a few countries. South Africa therefore depends upon trade with those countries. Neither the United Kingdom nor the United States nor West Germany, however, really depends on the South African trade to the same degree. For each of these countries, and for South Africa's other trading partners, trade with South Africa is a very small fraction of the total. (See table B 11.) It cannot possibly be said that the South African trade is crucial to economic activity in any of the developed countries.

119. The figures for the details of imports and exports with each major trading partner confirm the general view put forward in this section. Nearly every list is the same. Capital goods figures importantly in the list of exports to South Africa. Processed raw materials, food and semi-manufactures are the principal imports from South Africa. And exports to South Africa are, on the whole, rising more rapidly than imports. ^{33/}

120. One striking fact does emerge from the detailed figures: United States and West German exports of capital goods to South Africa are increasing very rapidly. In some categories the two countries together were exporting 50 per cent more by value to South Africa than Great Britain was. British exports of non-electrical machinery to South Africa, for instance, were valued at just over \$150 million in 1968. United States and West German exports of the same goods were valued at \$220 million in that year. ^{34/}

^{33/} The relevant tables are not reproduced in this publication.

^{34/} The relevant tables are not reproduced in this publication.

121. South Africa's economic position in the world is therefore a difficult one. The country is following economic and social policies which have made it an object of universal condemnation. Yet at the same time the South African economy is an integral part of the world economy. It has important markets in Europe, North America and Asia. It buys large and critically important quantities of manufactured goods abroad. Most of its major trading partners allow South Africa to accumulate the debts which its trade deficit sometimes entails. South Africa would seem, therefore, to be peculiarly vulnerable to economic pressures from other countries.

TABLE B 1

SOUTH AFRICA: EXPORTS AND IMPORTS IN RELATION TO GROSS DOMESTIC PRODUCT, 1947-1967
(percentages)

	1947	1957	1961	1962	1963	1964	1965	1966	1967
Imports	30.9	23.8	18.2	17.4	19.5	21.6	22.6	19.1	20.5
Exports									
Including gold	20.9	28.5	26.8	26.4	25.6	24.6	22.8	22.4	21.6
Excluding gold	10.9	19.3	16.6	15.8	15.3	14.7	13.2	13.6	13.5

Source: South African Bulletin of Statistics, 1968

TABLE B.2

SOUTH AFRICA: IMPORTS AND EXPORTS, 1959-1968

(in millions of rand)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Imports	973.6	1,107.1	993.8	1,008.3	1,202.9	1,529.9	1,752.5	1,640.5	1,913.9	1,878.0
domestic exports	(787.1)	(799.0)	(849.8)	(867.4)	(917.7)	(955.0)	(964.5)	(1,111.2)	(1,244.7)	(1,388.7)
re-exports	(77.4)	(78.8)	(95.4)	(79.7)	(80.5)	(83.5)	(93.5)	(91.6)	(117.2)	(114.8)
Exports	864.5	877.8	945.2	947.1	998.2	1,038.5	1,058.0	1,202.8	1,361.9	1,503.5
Balance of Trade (including re-exports)	-109.1	-229.3	-48.6	-61.2	-204.7	-491.4	-694.5	-437.7	-552.0	-374.5

Source: Monthly Abstract of Foreign Trade Statistics,
Department of Customs and Excise

Note 1. All values f.o.b.

Note 2. Gold output not included.

TABLE B 3

SOUTH AFRICA: FOREIGN TRADE, 1968-1969

(in millions of rands)

	<u>Imports</u>		<u>Exports</u>	
	annual rate	3-mo. average annual rate	annual rate	3-mo. average annual rate
1968 March	1,814	1,872	1,400	1,535
June	1,829	1,897	1,250	1,433
September	2,017	2,000	1,392	1,398
December	2,017	1,993	1,279	1,350
1969 March	1,933	1,966	1,420	1,410
June	2,100	2,205	1,451	1,351
September	2,588	2,425	1,559	1,513
December	2,465	2,375	1,634	1,488

Source: South African Reserve Bank,
Quarterly Bulletin, March 1970.

TABLE B 4

SOUTH AFRICA: PERCENTAGE COMPOSITION OF EXPORTS, 1957-1966

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
Agriculture, forestry, fishing	29.0	25.0	23.3	22.5	26.4	30.5	32.2	28.5	21.0	18.3
Mining and quarrying	28.0	29.4	28.6	29.0	25.5	23.9	22.6	23.2	28.0	23.9
Manufacturing	43.0	45.6	48.1	48.5	48.1	45.6	45.2	48.3	51.0	57.8
TOTAL	100	100	100	100	100	100	100	100	100	100

Source: South African Bulletin of Statistics, 1968.

TABLE B.5

SOUTH AFRICA: EXPORTS AND IMPORTS BY STAGE
OF PRODUCTION, 1957 AND 1966

	1957		1966	
	R(m.)	%	R(m.)	%
Imports				
1. Raw materials	99.6	9.1	218.8	13.4
2. Processed or manufactured goods	767.0	69.8	1,096.1	66.8
3. Articles ready for sale	231.4	21.1	299.2	18.2
4. not classified	0.4	-	26.4	1.6
Exports				
1. Raw materials	397.0	49.6	557.6	46.2
2. Processed or manufactured goods	365.2	45.6	598.7	49.8
3. Articles ready for sale	38.5	4.8	33.1	2.8
4. not classified	0.4	-	13.6	1.2

Source: South African Bulletin of
Statistics, 1968

TABLE B 6

SOUTH AFRICA: PRODUCTION AND TRADE OF ENERGY IN MILLIONS
OF METRIC TONS OF COAL EQUIVALENT: 1962-1967

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
<u>Total Energy</u>						
Net imports	4.33	4.82	6.21	6.92	8.18	10.07
Production	41.28	42.46	44.93	48.50	48.02	49.32
Consumption	45.15	46.99	50.48	54.45	55.22	56.96
1. Solid fuels						
Net imports	-1.60	-1.33	-1.29	-1.20	-1.09	-1.26
Production	41.27	42.45	44.92	48.49	48.01	49.38
Consumption	39.68	41.13	43.63	47.29	46.92	48.12
2. All oil fuels						
11. Net imports, metric tons liquid fuel (m.)	2.55	2.27	0.8	1.36	1.41	1.35
12. Net imports, metric tons coal equivalent (m.)	3.82	3.40	1.2	2.19	2.58	2.12
21. Production, metric tons liquid fuels (m.)	1.57	2.21	4.84	4.36	5.25	6.88
22. Production metric tons coal equivalent (m.)	2.34	3.22	7.25	6.55	7.86	10.32
31. Consumption, metric tons liquid fuel (m.)	3.65	3.91	4.56	4.77	5.33	5.88
32. Consumption, metric tons coal equivalent (m.)	5.45	5.96	6.84	7.15	8.30	8.82
3. Crude petroleum						
11. Net imports, metric tons liquid fuel (m.)	1.62	2.11	4.85	4.67	5.50	7.15
12. Net imports, metric tons coal equivalent (m.)	2.11	2.74	6.31	6.06	7.15	9.30
21. Production, metric tons liquid fuel (m.)	0	0	0	0	0	0

SOUTH AFRICA: PRODUCTION AND TRADE OF ENERGY IN MILLIONS
OF METRIC TONS OF COAL EQUIVALENT: 1962-1967 (Contd.)

	1962	1963	1964	1965	1966	1967
22. Production, metric tons coal equivalent (m.)	0	0	0	0	0	0
31. Consumption, metric tons liquid fuel (m.)	1.63	2.12	4.85	4.67	5.50	7.15
32. Consumption, metric tons coal equivalent (m.)	2.12	2.75	6.31	6.06	7.15	9.30

Source: World Energy Supplies, Department of Economic and Social Affairs, United Nations Statistical Office, Series J.

Note 1. Metric tons of liquid fuel converted to coal equivalent by multiplying by 1.5 for all liquid fuels except crude petroleum. Coal equivalent for the latter is obtained by multiplying by 1.3.

Note 2. Total consumption for liquid fuels equates production plus net imports minus.

TABLE B.7

SOUTH AFRICA'S EXPORTS BY SITC SECTIONS, 1959-1968

(in millions of rands)

SITC CODE	DESCRIPTION	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
●	Food and Live Animals	158.5	170.6	215.5	263.0	291.2	273.2	224.6	236.6	323.5	373.7
1	Beverages and Tobacco	5.3	6.0	7.2	7.4	8.5	9.8	11.2	10.5	11.7	13.2
2	Crude materials, inedible	319.1	328.9	317.9	311.0	320.1	379.3	368.1	356.8	335.0	338.3
3	Mineral Fuels, etc.	13.5	12.9	12.5	15.8	17.1	35.1	30.8	38.6	61.2	77.8
4	Animal and Vegetable Oils and Fats	8.5	8.9	11.3	8.7	6.9	9.3	9.2	6.6	6.0	7.6
5	Chemicals	34.8	31.3	31.8	30.8	31.7	35.2	36.3	39.2	46.1	52.0
6	Manufactured Goods by Materials	179.2	186.1	200.2	184.2	199.4	228.5	282.2	387.3	423.6	461.4
7	Machinery and Transport Equipment	35.3	36.2	35.5	29.8	25.6	36.8	47.3	62.5	75.3	91.0
8	Miscellaneous Manufactured goods	20.8	19.9	16.5	15.2	13.6	12.2	15.0	18.0	19.6	16.0
9	Commodities, Transactions n.e.s.	2.7	2.5	4.4	1.6	1.6	17.9	32.7	48.2	59.4	70.3
	TOTAL:	778.6	799.9	852.8	867.4	915.8	1,042.0	1,000.8	1,207.4	1,364.9	1,502.4

Note 1. Not including gold

Note 2. Total includes "settlers' effects"

Note 3. Columns may not add to exact totals.

From 1959 to 1963 totals correspond to "domestic exports".

From 1964 to 1968 they correspond to "total exports".

Source: Foreign Trade Statistics.

TABLE B.8

SOUTH AFRICA'S IMPORTS BY SITC SECTIONS, 1959-1968

(in millions of rands)

SITC CODE	DESCRIPTION	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
0	Food and Live Animals	54.8	48.7	40.8	39.5	59.8	65.4	63.8	104.7	89.2	70.5
1	Beverages and Tobacco	7.1	7.6	6.8	7.4	9.5	13.0	13.0	17.1	15.8	14.5
2	Crude materials, inedible	59.3	73.9	70.8	69.9	80.6	113.0	131.8	112.2	131.5	111.1
3	Mineral fuels, etc.	76.9	75.9	76.2	79.1	76.2	90.8	92.3	103.6	112.2	123.0
4	Animal and Vegetable Oils and Fats	8.9	8.6	7.7	6.5	6.7	7.8	10.8	10.5	8.8	9.6
5	Chemicals	70.4	78.1	73.2	75.2	87.0	113.3	123.7	130.8	156.7	115.6
6	Manufactured Goods by materials	266.1	316.7	277.2	291.1	320.2	355.9	425.8	346.0	406.2	312.8
7	Machinery and Transport Equipment	349.4	409.0	362.9	367.8	474.4	633.2	738.0	667.6	803.7	826.0
8	Miscellaneous Manufactured Goods	72.1	82.5	69.9	65.3	83.9	107.5	122.0	111.0	141.5	154.5
9	Commodities, Transactions n.e.s.	7.8	10.1	19.3	20.4	4.4	20.1	31.0	37.0	48.3	38.9
	TOTAL:	977.2	1,111.1	1,004.8	1,022.3	1,202.9	1,539.9	1,752.5	1,640.5	1,913.9	1,876.7

Source: Foreign Trade Statistics

Note 1. Columns may not add to exact totals.

TABLE B 9

SOUTH AFRICA: DIRECTIONS OF TRADE, 1966-1968
(in millions of rands)

Continent or Country	Exports to		Imports From	
	1966	1967	1966	1967
TOTAL	1,201.7	1,361.0	1,503.0	1,913.9
Africa TOTAL	196.3	223.4	249.1	120.5
Europe TOTAL	702.2	738.2	797.9	1,029.7
Common Market	227.3	241.6	265.1	433.3
Belgium-Luxembourg	54.8	47.2	50.2	23.5
France	39.1	35.2	37.5	53.8
Federal Republic of Germany	68.9	85.7	101.3	231.1
Italy	43.6	50.2	43.0	70.7
Netherlands	20.9	23.3	31.5	54.2
Free Trade Area	426.7	444.8	500.0	591.5
United Kingdom	403.6	421.2	476.1	497.2
Sweden	8.1	7.0	7.5	34.0
Switzerland	4.9	3.3	2.4	31.1
Other	10.9	13.3	14.0	29.2
Other Europe	48.2	51.8	32.8	29.9
			16.6	23.3

SOUTH AFRICA: DIRECTIONS OF TRADE, 1966-1968 (Contd.)

	Exports To		Imports From	
	1966	1967	1966	1967
America TOTAL	163.1	133.7	362.0	395.3
United States	136.3	107.4	291.3	322.2
Canada	20.0	20.8	50.7	57.1
Other	6.8	5.5	19.9	16.0
Asia TOTAL	106.8	203.3	222.6	268.1
Japan	82.8	175.2	90.1	115.6
Other	24.0	27.8	132.5	152.5
Oceania TOTAL	11.9	14.2	30.6	39.9
Australia	9.7	12.0	22.1	31.1
New Zealand	1.7	1.4	8.4	2.8
Other	0.6	27.8	-	-
Unspecified	21.3	48.4	20.4	33.9
Adjustments	+0.1	+0.1	+0.1	-
				1968
				391.3
				332.8
				44.6
				13.9
				287.2
				124.0
				163.2
				30.0
				28.1
				1.9
				-
				30.0

Source: South African Bulletin of Statistics,
December 1968 and December 1969.

TABLE B 10

SOUTH AFRICA: DIRECTIONS OF TRADE MAIN TRADING PARTNERS
(in millions of dollars)

	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
United Kingdom						
exports to	449.6	478.4	498.5	552.4	574.4	666.5
imports from	506.0	605.8	692.2	628.9	696.0	629.3
United States						
exports to	124.3	124.3	138.6	188.0	150.7	146.2
imports from	286.3	408.9	463.7	408.1	451.7	465.9
Federal Republic of Germany						
exports to	69.5	81.4	77.0	90.3	113.2	141.8
imports from	181.6	231.5	267.8	246.5	324.3	355.2
Japan						
exports to	99.3	118.1	100.4	118.3	244.9	286.2
imports from	79.0	114.1	140.9	126.4	162.4	173.5
Italy						
exports to	69.4	56.0	52.7	61.1	69.1	60.1
imports from	47.7	65.2	98.3	71.9	99.1	109.3

Source: IMF Directions of Trade Annual
1963-1967, and IMF Directions of
Trade, May 1969.

TABLE B 11

IMPORTANCE OF TRADE WITH SOUTH AFRICA FOR MAIN TRADING PARTNERS
(in millions of dollars)

	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
United Kingdom					
Total exports	12,783	13,711	14,662	14,390	15,347
Exports to South Africa	605	692	629	696	629
Total imports	15,951	16,138	16,672	17,743	18,959
Imports from South Africa	478	499	552	574	667
United States					
Total exports	26,633	27,533	30,450	31,634	34,656
Exports to South Africa	409	464	408	452	466
Total imports	18,750	21,432	25,629	26,895	33,261
Imports from South Africa	124	139	188	151	146
Federal Republic of Germany					
Total exports	16,229	17,911	20,156	21,763	24,884
Exports to South Africa	232	268	247	324	355
Total imports	14,709	17,611	18,168	17,546	20,295
Imports from South Africa	81	77	90	113	142
Japan					
Total exports	6,678	8,456	9,779	10,440	12,974
Exports to South Africa	114	141	126	162	174
Total imports	7,947	8,168	9,523	11,663	12,989
Imports from South Africa	118	100	118	245	286
Italy					
Total exports	5,929	7,187	8,033	8,702	10,159
Exports to South Africa	65	98	72	99	109
Total imports	7,231	7,348	8,570	9,702	10,252
Imports from South Africa	56	53	61	69	60

Source: IMF, Directions of Trade, Annual
1963-1967, February and March 1969.

IV. FOREIGN INVESTMENT IN SOUTH AFRICA

122. South Africa has always been an important outlet for foreign investment, especially since the beginning of the mining boom in the last century. The fact that South Africa is now an independent republic pursuing its own course, in the face of considerable international opposition, has not changed this. Foreign capital still flows to the south in abundance. Total foreign investment in South Africa now probably exceeds R5,000 million (\$7,000 million).

123. The latest available figures for foreign investment are for 1968. They show that total foreign liabilities in that year reached a level of R4,583 million (\$6,416 million). This represented an increase of approximately 65 per cent over the year 1956, when foreign liabilities were valued at R2,790 million (\$3,906 million) (see table C-1). Foreign investment in South Africa, in other words, increased at a rate of roughly 5 per cent per year during the 1960s. This is higher than the rate of increase of domestic investment in many countries which are investing in South Africa.

124. Most of the rise in foreign liabilities has been due to increasing direct investment. Between 1956 and 1968 direct investment rose by more than R1,400 million (\$1,960 million). Foreign investors, or most of them, evidently prefer direct participation in economic activity in South Africa. Indirect investment increased very slowly over this period. Investment in shares actually fell, and the rise in indirect investment was due largely to the increase in loans to the Government and banking sector. The contrast between the behaviour of direct and indirect investment is striking. The large corporations which undertake most direct investment apparently have more faith in the prospects of the South African economy than those who invest via the stock market or the money market.

125. Figures on the investments of individual countries in South Africa are no longer published. An analysis of the distribution of ownership of foreign liabilities covering the years up to 1966 published by the United Nations, showed that the United Kingdom and the United States were by far the largest investors in South Africa. In 1966 the United Kingdom owned 57 per cent of foreign investments in that country. The United States owned 13 per cent of the total. France, Switzerland and West Germany each owned between 3 and 5 per cent (see table C-4).

126. The United Nations study showed that the British share in South African investments was declining steadily during the 1960s. That of the United States, by contrast, was rising. The shares of other countries were more or less constant or falling slowly.

127. The most recent available figures show the ownership of foreign investments by broad areas. It is clear that Great Britain must still be the largest investor in South Africa by a large margin. According to Reserve Bank statistics, roughly 60 per cent of total foreign liabilities in 1968 were owed to individuals and companies in the sterling area. British holdings are unlikely to account for

less than 56 or 55 per cent of all investments. It is not possible to say with any certainty, but the decline in the British share of foreign investments has probably been continuing (see table C-2).

128. The United States has been the second most important investor in South Africa for some time. In 1966 its investments there were valued at approximately R500 million (\$700 million). According to the most recent figures, dollar area countries owned R675 million (\$945 million) in investments only two years later. The position of the United States in South Africa thus remains a very important one. Its share of total foreign investments may well have risen to 15 per cent, although it is not possible to tell with certainty from available figures (see tables C-2 and C-3).

129. One of the most striking changes in the pattern of investment in recent years has been the extraordinary rise of West European holdings. In 1966 the holdings of the three largest European investors totalled approximately R460 million (\$640 million). Total European investments could not have been more than R550 million (\$770 million). Yet, by 1968, South Africa was reporting R864 million (\$1,210 million) of foreign liabilities to West Europe. By any standards, this is an astonishing rise. And surprisingly, most European investment has been indirect (see tables C-2 and C-3).

130. More than two thirds of all foreign investment in South Africa is still direct investment, 70 per cent of the direct investment in British hands. American direct investment has been increasing steadily every year. Most European investment is in shares and mortgage loans. But European direct investment stood at R394 million (\$552 million) in 1968. This was approximately 25 per cent less than the United States direct investment, which stood at roughly R500 million (\$700 million) in that year.

131. There are two immediate reasons for the growing importance of foreign direct investment in South Africa in the last decade. The first is that many British and American multi-national corporations are already established in South Africa. Much of their new investment is from retained earnings. The second is that South Africa has been going through a period of rapid industrial development which offers the opportunity of high profits.

132. Historically, the most important sector for private foreign investment has been mining. In the early part of this century most foreign holdings were in mining. As the development of industry accelerated, however, the importance of mining diminished and more and more investment was directed into the manufacturing sector. A considerable proportion of foreign investment went into finance and trade. Most of these holdings were British, and that fact was a reflection of Britain's peculiar position in South Africa and in the world economy.

133. In 1960 a little over 33 per cent of total foreign holdings were still in mining. The proportion of foreign investments in manufacturing industry had risen to nearly 27 per cent. Finance and trade accounted for 17 per cent and 14 per cent respectively. Most investing countries had the bulk of their holdings in mining and industry. It should be noted that these figures, which are for total foreign liabilities, include both direct and indirect investments in the sectors in question (see table C-5).

134. According to a speech by the chief economist of the Volkskas Bank early this year, the proportion of total foreign investment in manufacturing had risen to 31 per cent by the end of 1968. There are as yet no official figures to confirm this directly, but recent trends in new investment could easily have raised the figure to this level. This source also noted that foreign interests now control 22 per cent of South Africa's manufacturing capacity. 35/

135. For some time after the war South Africa was a net importer of capital. In the four years immediately after the war more than half of gross domestic investment was financed by capital imports. As the country began to develop industrially, however, it began to generate much more of its own finance. By the mid-1950s, the proportion of net capital imports to gross domestic investment had fallen well below 10 per cent. 36/

136. For a period in the early 1960s, South Africa was actually a net exporter of capital. In 1962 net capital exports were equal to more than 10 per cent of gross domestic investment. The very rapid growth of recent years, however, has changed this. South Africa cannot sustain current rates of growth with the capital generated by the domestic economy alone. It now needs large capital imports. Average annual net imports of capital between 1965 and 1969 were more than R220 million (\$308 million). This represented an average of more than 9 per cent of gross domestic investment in each year (see table C-7).

137. The importation of capital is of more than purely quantitative significance. In many instances capital inflows are in fact the finance for purchasing sophisticated goods, especially machinery, which cannot be made in South Africa. A number of countries are now lending South Africa money to purchase such goods from their own export industries. What this means is that foreign "capital" cannot be replaced simply by finding new sources of finance in South Africa. These capital imports are in fact irreplaceable. The figure for net capital imports is to some extent a measure of the volume of irreplaceable commodities necessary for sustaining economic growth.

138. The private sector has not been the only recipient of foreign capital. A number of countries have made substantial long-term loans to the South African Government in recent years. Germany, Italy, Switzerland and the United States alone lent the Central Government more than R80 million (\$112 million) between 1964 and 1968. Foreign Governments also provided very substantial unrequited transfers in those years. In the five years up to 1968, South Africa received R116 million (\$162 million) in intergovernmental transfers. The precise nature of these transfers has not been made clear in official South African sources (see table C-9).

139. The large amounts of foreign capital invested in South Africa produce, as will be seen later, unusually high returns. The rise in foreign investment and these high returns have combined to raise South Africa's investment payments to high levels. Total payments in 1968 were more than R300 million (\$420 million), an increase of nearly 50 per cent since 1964. Roughly two thirds of these payments, as might be expected, are to direct investors (see table C-10).

35/ News from South Africa, New York, 25 March 1970.

36/ R. Horowitz, The Political Economy of South Africa (New York, 1967), p. 359.

140. From South Africa's point of view, these investment payments constitute a significant burden on the balance of payments, and one which is likely to rise as foreign investment continues to flow into the country. For the recipient countries, they obviously represent important receipts. British and American investors probably received about 65 per cent of the R315 million (\$441 million) paid out by South Africa in 1968. They are the principal foreign beneficiaries of the current South African boom. For the British economy, which has a perennial balance-of-payments problem, the income received from South Africa is of no little importance.

141. Of all the countries with economic interests in South Africa, Great Britain is obviously the most important by far. Britain no longer has anything like the influence it once had there, but its stake in the country remains large. Many British companies are established in South Africa and many use it as the base for their African operations. Many British industries have a substantial trade with South Africa. British investors have an enormous amount of money invested there.

142. South Africa is one of the most important outlets for British direct investment overseas. Between 9 and 10 per cent of total British direct investments are in South Africa. Only Australia and Canada rank higher in importance among countries in which British companies invest directly. By 1965 direct investments in South Africa exceeded those in the United States. They were only slightly less than direct investments in India and Malaysia combined (see table C-12).

143. Annual British investment in South Africa increased throughout the 1960s. Average net investment in South Africa in 1961-1963 was 19 million pounds per year. By 1964-1966 that figure had roughly doubled. Capital was flowing much more rapidly to South Africa than to the United States. British investments in that country are thus no mere legacy of history. South Africa is still, so far as Britons are concerned, a very attractive place to invest (see table C-13).

144. There is a simple reason for this: British earnings in South Africa are quite remarkable. Britain has a good deal more capital invested in Australia than in South Africa and capital is flowing to Australia in larger quantities than it is to South Africa. None the less, annual earnings on direct investment in South Africa exceed those on investments in other countries by a good margin. In 1961-1963 earnings in South Africa were 37 million pounds annually. Annual earnings from the United States were only 26 million pounds. Australia was producing 35 million pounds per year. In the mid-1960s average annual earnings from South Africa jumped to 60 million pounds (see table C-13).

145. Most British direct investment in South Africa is in the manufacturing industry. The annual flows of investment into manufacturing are much higher than the flows to sectors like mining and distribution. This rapid growth is, of course, the logical counterpart of the changes which are going on in the South African economy. Manufacturing is likely to continue to attract the lion's share of new direct investment in the future. Investment in mining is also considerable, but most of it is in financial corporations controlling the industry rather than in operating companies. For that reason, most investment in the mining sector is likely to be classified as indirect investment (see tables C-14 and C-15).

146. Rates of return on British investment in South Africa have been consistently higher than those in almost any other country. Between 1960 and 1965, average returns on direct investments in South Africa varied between 10.4 and 14.8 per cent. The only country to provide consistently better returns for British investors was Malaysia. Profits in Ghana were high, but they fluctuated sharply. Returns on South African holdings were almost 50 per cent higher than those on the average British direct investment overseas (see table C-16).

147. Most British investments, direct or indirect, are concentrated in mining and manufacturing in South Africa. That is the immediate reason for the fact that South African investments yield such high profits. Board of Trade figures suggest that returns on investments in those sectors in South Africa are much higher than returns on similar investments in Western Europe or North America. In the early 1960s, mining investments in the overseas sterling area had a yield of between 25 and 30 per cent. ^{37/} Returns on the typical mining investment in South Africa may well have been higher.

148. Direct investments in manufacturing in the overseas sterling area seemed to have produced consistently higher yields than similar holdings in North America and Western Europe. The average return on manufacturing investments in South Africa in the first half of the last decade was just under 10 per cent per year. The average annual yield on such investments in Europe, which still absorbs a significant amount of British capital, was barely 7 per cent in that period. ^{38/}

149. Figures on rates of return by sectors of South African industry are not currently available. However, the differences in rates of return between countries, together with the little information which is available on returns by sector, suggest that returns to mining and manufacturing in South Africa may be well above the average.

150. Direct investment by the United States in South Africa is not very large, and that country's financial stake in the fortunes of the Republic does not appear to be an important one. The United States does control a significant proportion of foreign investments in South Africa, but direct investments there do not constitute an important part of total United States' overseas investment. In 1968 the United States had just under \$700 million in direct investments in South Africa. That represented only 1.1 per cent of total overseas direct investment (see table C-18).

151. Direct investment by the United States in South Africa, however, has been growing with remarkable speed. It rose by more than \$350 million between 1959 and 1968. In the last five years it has averaged more than \$55 million annually. Foreign direct investment is one of the most rapidly growing "sectors" of the United States economy, and investment in South Africa is keeping pace with that growth (see table C-18).

152. The bulk of United States direct investment has always been concentrated in the manufacturing industries of South Africa. In 1959 34 per cent of United States direct holdings were in manufacturing, as compared to 27 per cent in mining

^{37/} United Kingdom, Board of Trade Journal, 26 January 1968.

^{38/} Ibid.

and smelting. During the last decade, however, United States investment in manufacturing grew much more rapidly than total direct investment in the Republic. As a consequence, the proportion of that investment rose to 48 per cent of the total in 1968. The proportion of investment in mining fell sharply (see table C-19).

153. Rates of return on United States direct investment in South Africa have been very high. This is not surprising since whatever the differences in efficiency between United States and British firms, the investments of both were concentrated in the same sectors of the South African economy. It is the condition of that economy which must be taken as the fundamental determinant of the rate of return. During most of the last decade returns on United States direct investments averaged roughly 19 per cent per year. The average return on United States foreign investment as a whole was no more than 11 per cent (see table C-21).

154. In short, Great Britain has an important economic interest in South Africa. A large proportion of its total overseas investment is in South African holdings. The returns on these investments are crucial for large British corporations. They are important to the British balance of payments. The continuation of normal economic relations with South Africa is bound, in the present context, to be one of the priorities of British economic and foreign policy. This is only on the assumption, however, that policy-makers ignore the importance of political and economic developments on the African continent as a whole.

155. The United States clearly has important investments in South Africa. United States companies are expanding into the most dynamic sectors of the economy. United States investment in the Republic constitutes roughly 25 per cent of total United States direct investment in Africa. It is, however, of relatively little importance in the whole spectrum of United States foreign investments. Only 1.1 per cent of total United States direct investment is in South Africa (see table C-18).

156. Yet appearances in this case are somewhat deceiving. For reasons which will be discussed at length later, the importance of South Africa is much greater than these figures suggest. In the short run, the political stability of Africa will be greatly influenced by events in the Republic. Africa is becoming more and more important to United States investors. United States direct investment in Africa has increased by more than 200 per cent since 1959, and a significantly larger proportion of all United States holdings are now in Africa. What is more, the continent now produces nearly 10 per cent of all earnings on direct investment overseas. In 1960 it produced less than 1 per cent (see table C-20).

157. It follows that the United States has an important stake in South Africa. For if that country is the key to change in Africa, then it is also the key to the protection of investments which are of growing importance to the United States economy, or at least to a number of large and influential United States corporations. The United States may not have an important economic stake in South Africa, but, because of its important interests in the rest of Africa, it has a major political stake there. If political stability in South Africa is essential to the protection of United States interests in Africa, then the United States must be almost as deeply involved in the fate of South Africa as Great Britain.

TABLE C 1

FOREIGN LIABILITIES OF SOUTH AFRICA
(in millions of rands)

	1956	1963	1964	1965	1966	1967	1968
Direct Investment							
Central government and banking sector							
Long term	61	77	87	123	124	131	134
Short term	33	35	36	71	76	76	90
Total	94	112	122	194	200	207	224
Private Sector							
Long term							
Shares, nominal value	420	472	480	502	546	564	633
Reserves	558	847	918	1,010	1,141	1,219	1,410
Branch and partnerships balances	90	96	93	95	98	101	112
Mortgages, longterm loans etc.	192	130	130	154	201	223	268
Real estate	8	6	6	6	6	6	6
Total long term	1,268	1,551	1,627	1,768	1,992	2,113	2,429
Short term	256	305	302	324	357	368	442
Total Private Sector	1,524	1,856	1,929	2,092	2,349	2,481	2,871
Total Direct Investment	1,618	1,968	2,051	2,286	2,549	2,688	3,095

FOREIGN LIABILITIES OF SOUTH AFRICA (Contd.)

	<u>1956</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
Non-Direct Investment							
Central government and banking sector							
Long term	163	177	165	196	174	122	175
Short term	65	140	157	204	230	199	209
Total	228	317	322	400	404	321	384
Private Sector							
Long term							
Shares	660	550	549	556	570	594	641
Mortgages, long term loans, etc.	197	122	115	127	145	225	298
Total long term	857	672	664	683	715	819	939
Short term	87	94	98	102	157	138	165
Total Private Sector	944	766	762	785	872	957	1,104
Total Non-Direct Investment	1,172	1,063	1,084	1,185	1,276	1,278	1,488
TOTAL FOREIGN LIABILITIES	2,790	3,053	3,135	3,471	3,825	3,966	4,583

Source: South African Reserve Bank, Quarterly Bulletin, December 1969.

TABLE C 2

DISTRIBUTION OF FOREIGN LIABILITIES OF SOUTH AFRICA 1968
(in millions of rands)

	Total	Sterling Area		Dollar Area		West Europe	Other Areas
		Area	Inter-Organis.	Other	Areas		
Direct Investment							
Central government and banking sector							
Long term	134	127	-	2	4	1	
Short term	90	64	-	4	10	12	
Total	224	191	-	6	14	13	
Private Sector							
Long term							
Shares, nominal value	633	434	-	96	99	4	
Reserves	1,410	978	-	288	141	3	
Branch and partnership balances	112	85	-	18	9	-	
Mortgages, long term loans etc.	268	169	-	42	50	7	
Real Estate	6	5	-	-	1	-	
Total long term	2,429	1,671	-	444	300	14	
Short term	442	282	-	79	80	1	
Total Private Sector	2,871	1,953	-	523	380	15	
Total Direct Investment	3,095	2,144	-	529	394	28	

DISTRIBUTION OF FOREIGN LIABILITIES OF SOUTH AFRICA 1968 (Contd.)

	Total	Sterling Area	Dollar Area		West Europe	Other Areas
			Intern. Organis.	Other		
Non-Direct Investment						
Central government and banking sector						
Long term	175	37	4	20	113	1
Short term	209	71	102	1	34	1
Total	384	108	106	21	147	2
Private Sector						
Long term						
Shares	641	426	-	40	170	5
Mortgages, long term loans etc.	298	75	32	64	126	1
Total long term	939	501	32	104	296	6
Short term	165	114	-	21	27	3
Total Private Sector	1,104	615	32	125	323	9
Total Non-Direct Investment	1,488	723	138	146	470	11
TOTAL FOREIGN LIABILITIES	4,583	2,867	138	675	864	39

Source: South African Reserve Bank, Quarterly Bulletin, December 1969.

TABLE C 3

SOUTH AFRICA: FOREIGN LIABILITIES, END-YEARS, 1964-1966
(in millions of dollars)

	<u>Official</u>	<u>Private Direct</u>	<u>Private Non-direct</u>	<u>Total Private</u>	<u>TOTAL</u>
United Kingdom					
1964	294	1,775	572	2,347	2,642
1965	349	1,906	572	2,478	2,827
1966	363	2,077	601	2,678	3,042
United States					
1964	47	363	75	438	485
1965	78	415	75	490	568
1966	71	494	131	625	697
France					
1964	10	111	122	233	243
1965	40	117	124	242	281
1966	26	129	124	253	279
Switzerland					
1964	35	86	74	160	193
1965	47	94	78	172	219
1966	49	108	74	182	231
International Organizations					
1964	167	-	51	31	197
1965	152	-	29	29	181
1966	176	-	35	35	211
Federal Republic of Germany					
1964	-	-	-	-	-
1965	-	-	-	-	-
1966	29	95	38	132	160
Belgium and Luxembourg					
1964	3	17	22	39	42
1965	14	20	22	42	56
1966	13	19	26	46	58

SOUTH AFRICA: FOREIGN LIABILITIES, END-YEARS, 1964-1966 (Contd.)

	<u>Official</u>	<u>Private Direct</u>	<u>Private Non-direct</u>	<u>Total Private</u>	<u>TOTAL</u>
Other countries					
1964 ¹	61	327	162	491	551
1965 ¹	109	369	194	563	671
1966	113	340	182	522	635
Total					
1964	617	2,679	1,058	3,737	4,354
1965	829	2,920	1,096	4,016	4,845
1966	840	3,263	1,211	4,474	5,313

Source: South African Reserve Bank, Quarterly Bulletin of Statistics, December 1964 and 1965, and Quarterly Bulletin, December 1966 and 1967.

Note 1. Including Federal Republic of Germany for which separate data are not available.

Note 2. Figures refer to South Africa, Namibia (South West Africa), and former High Commission Territories.

Note 3. Components may not add to totals due to rounding.

TABLE C 4

DISTRIBUTION OF FOREIGN LIABILITIES, END-YEARS 1964-1966
(percentages)

	<u>Official</u>	<u>Private Direct</u>	<u>Private Non-direct</u>	<u>Total Private</u>	<u>TOTAL</u>
United Kingdom					
1964	6.8	40.8	13.1	53.9	60.7
1965	7.3	39.7	11.9	51.6	58.9
1966	6.8	39.1	11.3	50.4	57.3
United States					
1964	1.1	8.3	1.7	10.8	11.1
1965	1.6	8.6	1.6	10.2	11.8
1966	1.3	9.3	2.5	11.8	13.1
France					
1964	0.2	2.6	2.8	5.4	5.6
1965	0.8	2.4	2.6	5.0	5.9
1966	0.5	2.4	2.3	4.8	5.2
Switzerland					
1964	0.8	2.0	1.7	3.7	4.4
1965	1.0	2.0	1.6	3.6	4.6
1966	0.9	2.0	1.4	3.4	4.3
International Organizations					
1964	3.8	-	0.7	0.7	4.5
1965	3.2	-	0.6	0.6	3.8
1966	3.3	-	0.7	0.7	4.0
Federal Republic of Germany					
1964	-	-	-	-	-
1965	-	-	-	-	-
1966	0.5	1.8	0.7	2.5	3.0
Belgium and Luxembourg					
1964	0.1	0.4	0.5	0.9	1.0
1965	0.3	0.4	0.5	0.9	1.1
1966	0.2	0.4	0.5	0.9	1.1

DISTRIBUTION OF FOREIGN LIABILITIES, END-YEARS 1964-1966 (Contd.)

	<u>Official</u>	<u>Private Direct</u>	<u>Private Non-direct</u>	<u>Total Private</u>	<u>TOTAL</u>
Other Countries					
1964 ¹	1.4	7.5	3.7	11.2	12.6
1965 ¹	2.3	7.7	4.0	11.7	14.0
1966	2.1	6.4	3.4	9.9	12.0
Total					
1964	14.2	61.5	24.3	85.8	100
1965	16.4	60.8	22.8	83.6	100
1966	15.8	61.4	22.8	84.2	100

1. Including Federal Republic of Germany for which separate data are not available.

TABLE C 5

DISTRIBUTION OF FOREIGN LIABILITIES OF PRIVATE SECTOR, END 1960
(percentages)

	Mining	Manufact- uring	Finan- cial	Wholesale and Retail Trade		Insurance	Other	Total
				Wholesale	Retail			
United Kingdom	20.0	18.5	9.8	9.5	1.6	4.2	63.6	
United States	4.9	3.1	1.3	2.1	0.1	1.7	13.2	
France	4.1	0.2	1.2	0.6	0.1	0.1	6.2	
Switzerland	1.1	0.9	1.3	0.1	0.1	0.3	3.7	
Rhodesia ²	0.8	0.4	1.2	0.2	0.4	0.2	3.2	
Belgium-Luxembourg	0.9	0.1	0.3	0.5	-	-	1.9	
Other Countries	1.3	3.4	1.5	1.0	0.6	0.4	8.2	
TOTAL	33.1	26.6	16.6	14.1	2.8	6.9	100.00	

Source: United Nations Foreign Investment in the Republic of South Africa, 1968.

1. Other than insurance.
2. Including former Federation of Rhodesia and Nyasaland.

TABLE C 6

SOUTH AFRICA: SUMMARY OF INFLOWS AND OUTFLOWS OF CAPITAL
(in millions of rands)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968*
NET CHANGES IN FOREIGN LIABILITIES										
Private Sector										
Long term	-11	-105	-28	-58	-124	-38	87	101	177	261
Short term	4	-12	-4	-3	35	-13	27	69	29	69
Central Government										
Long term	25	2	-6	-23	-12	-19	31	-32	-33	13
Short term	4	-10	14	13	19	18	11	26	-13	-1
Banking Sector										
Long term	-3	10	2	-3	-2	17	7	11	-9	43
Short term	-18	20	1	-24	4	-	47	13	-10	26
Total net change in foreign liabilities	1	-95	-21	-98	-80	-35	210	188	141	411

SOUTH AFRICA: SUMMARY OF INFLOWS AND OUTFLOWS OF CAPITAL (Contd.)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968*
NET CHANGES IN FOREIGN ASSETS										
Private Sector										
Long term	-30	-24	-12	-24	-12	12	3	-14	-22	-12
Short term	-2	-11	-21	10	4	-18	4	-18	-15	-36
Central Government										
Long term	-36	-2	-2	-1	-1	-1	-5	-36	-1	-1
Short term	-	-9	-22	-16	4	-3	4	12	1	-4
Banking Sector										
Long term	-4	1	-	-2	1	-4	1	-5	-1	-2
Short term	-	-	-	-	-	-	-	-	-	-
Total net change in foreign assets	-72	-45	-57	-33	-4	-14	7	-61	-38	-55
TOTAL NET CAPITAL MOVEMENTS										
Errors and unrecorded transactions	-71	-140	-78	-131	-84	-49	217	127	103	356
CORRECTED TOTAL NET CAPITAL MOVEMENTS	-15	-13	-18	11	23	16	41	22	66	90
	-86	-153	-96	-120	-61	-33	258	149	169	446

Source: South African Reserve Bank, Quarterly Bulletin, December 1969.

1. An inflow of capital ex liabilities and ex assets is always indicated as a positive amount, while a capital outflow is indicated with a minus sign.

* preliminary

TABLE C 7

SOUTH AFRICA: NET CAPITAL FLOW AND GROSS DOMESTIC INVESTMENT
(in millions of rands)

	1961	1962	1963	1964	1965	1966	1967	1968	1969
Gross Domestic Saving	1,368	1,456	1,570	1,705	2,021	2,131	2,582	2,388	2,739
Net Capital Flow from The Rest of the World	-96	-120	-61	-33	258	149	169	446	93
Change in Gold and Foreign Exchange Reserves	-107	-188	-87	89	36	-136	17	-536	67
Gross Domestic Investment	1,165	1,148	1,422	1,761	2,315	2,144	2,768	2,298	2,899
Ratio of Net Capital Flow to Gross Domestic Investment (percentage)	-8.2	-10.5	-4.3	-1.9	11.1	7.0	6.1	19.5	3.2

TABLE C 8

SOUTH AFRICA: DIRECT INVESTMENT CAPITAL
(in millions of rands)

	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
Investment in South Africa					
Long term in					
Branches	-4	3	3	3	7
Subsidiaries	12	60	65	50	69
Short term	-10	29	13	44	37
TOTAL	-2	92	81	97	113
Investment abroad					
Long term in					
Branches	19	2	-2	3	-5
Subsidiaries	-5	-6	-6	-27	-2
Other	-	-	-6	-	-
Short term	-1	-	2	-	5
TOTAL	13	-4	-12	-24	-2

Source: IMF Balance of Payments Yearbook,
November 1969.

1. Positive figures are credits (increase in liabilities or decrease in assets); negative figures are debits (decrease in liabilities or increase in assets).
2. Direct investment refers to (a) the total investment by all foreigners in undertakings in South Africa in which foreigners have a controlling interest, or (b) the investments of South African residents in undertakings abroad in which residents of South Africa have a controlling interest.

TABLE C 9

SOUTH AFRICA: LONG-TERM LOANS RECEIVED BY CENTRAL GOVERNMENT
(in millions of rands)

	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
Drawings from					
Germany	-	7	7	-	-
Italy	-	7	-	7	7
Luxembourg	-	7	-	-	-
Switzerland	-	-	-	-	8
United States: Private Banks	-	27	3	-	-
Other lenders	-	8	-	-	14
TOTAL	-	56	10	7	29
Unrequited transfers received by Central Government	29	31	43	54	68
Of which intragovernmental transfers	14	16	25	29	32

Source: IMF Balance of Payments Yearbook,
November 1969.

TABLE C 10

SOUTH AFRICA: INVESTMENT INCOME

(in millions of rands)

	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
Direct Investment					
Receipts					
Dividends	19	30	28	40	43
Interest	4	4	4	5	6
Profits of branches etc.	13	9	13	11	13
Income used for taxes	3	3	3	6	5
Subtotal	39	46	48	62	67
Payments					
Dividends	105	133	137	164	168
Interest	5	5	10	13	15
Profits of branches etc.	20	20	15	12	12
Income used for taxes	6	4	6	9	13
Subtotal	136	162	168	198	208
Other Investment					
Receipts					
Dividends	3	4	3	5	6
Interest	7	8	9	11	14
Income used for taxes	2	2	2	3	4
Subtotal	12	14	14	19	24
Payments					
Dividends	58	57	58	55	49
Interest on government loans	8	6	7	7	7
Other Interest	8	10	14	19	23
Income used for taxes	9	10	11	16	23
Subtotal	83	83	90	97	107
Total payments	219	245	258	295	315
Total receipts	51	60	62	81	91

Source: IMF Balance of Payments Yearbook, November 1969.

TABLE C. 11

SOUTH AFRICA: INVESTMENT PAYMENTS, 1960 - 1968 ¹
(in millions of dollars)

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
TOTAL Payments	263	291	267	273	307	344	363	413	441
Direct Investment	153	186	157	164	191	228	237	277	291
Other Investment	111	105	111	109	116	116	126	136	150

480

Source: IMF Balance of Payments Yearbook

1. Excluding undistributed profits.

TABLE C.12

UNITED KINGDOM: VALUE OF PRIVATE DIRECT INVESTMENT OVERSEAS
(END-YEARS)
(£ millions)

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Canada	541	474	484	500	508	531
Australia	432	469	520	573	655	713
Western Europe	299	341	385	444	493	549
United States	268	29	301	321	360	388
South Africa	258	271	290	319	353	392
India	228	243	260	275	289	304
Malaysia	111	119	127	132	138	144
Nigeria	88	99	94	100	92	97
Malawi)					8	8
Rhodesia)	78	95	103	98	66	62
Zambia)					8	8
Ghana	48	50	53	50	48	53
Other countries	689	739	793	828	892	966
TOTAL	2,950	3,190	3,410	3,640	3,910	4,215

Source: United Kingdom Board of Trade
Journal, 26 January 1968

TABLE C.13

UNITED KINGDOM: INVESTMENT FLOWS AND OVERSEAS EARNINGS BY SELECTED COUNTRIES
(£ millions)

	1961	1962	1963	1964	1965	1966	Average 1961-1963	Average 1964-1966
Net Investment Flows								
Australia	35	48	57	78	56	49	47	61
South Africa	9	15	34	33	44	35	19	37
India	14	14	14	14	16	2	14	11
Ghana	2	3	-2	-	8	3	1	4
Nigeria	11	-5	7	-5	7	-1	4	-
United States	21	10	11	31	23	42	14	32
EEC countries	26	29	40	37	36	51	22	29
Total Net Investment	226	209	236	263	308	276		
Overseas Earnings								
Australia	26	35	45	53	61	55	35	56
South Africa	29	36	47	62	57	60	37	60
India	21	23	21	21	25	18	22	21
Ghana	8	6	4	7	6	5	6	6
Nigeria	4	2	6	8	8	8	4	8
United States	19	22	38	42	49	68	26	53
EEC countries	20	20	21	13	19	25	20	19
Total Net Earnings	249	274	330	370	400	429		

Source: United Kingdom, Board of Trade Journal, 19 July 1968

TABLE C 14

UNITED KINGDOM: VALUE OF DIRECT INVESTMENTS IN SOUTH
AFRICA BY INDUSTRY

(£ millions)	
	<u>1965</u>
Mining	16.8
Electrical and mechanical engineering	44.1
Vehicles and shipbuilding	16.1
Other manufacturing	214.6
Construction	5.6
Distribution	42.5
Transport and communications	-
Shipping	7.5
Other	39.7
TOTAL	391.7

Source: United Kingdom Board of Trade
Journal, 19 July 1968.

TABLE C 15

UNITED KINGDOM: NET INVESTMENT IN SOUTH AFRICA BY INDUSTRY
(£ millions)

	<u>1965</u>	<u>1966</u>
Agriculture and mining	1.8	7.5
Electrical and mechanical engineering	4.0	5.5
Vehicles and shipbuilding	2.4	-0.7
Other manufacturing	17.6	16.7
Construction	2.3	1.0
Distribution	7.1	2.0
Transport, communication and shipping	-0.7	0.9
Other (including insurance and banking)	10.0	1.8
TOTAL	44.5	34.7

Source: United Kingdom, Board of Trade
Journal, 19 July 1968.

TABLE C 16

UNITED KINGDOM: AVERAGE RATES OF RETURN ON DIRECT
INVESTMENTS (PERCENTAGES) BY AREA AND COUNTRY

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
Overseas Sterling Area, TOTAL:	9.6	8.4	8.7	9.0	9.6	9.1
Australia	7.3	5.0	6.1	6.6	7.0	7.7
South Africa	10.3	10.4	12.1	12.9	14.8	12.1
India	8.4	8.3	8.4	6.7	6.9	7.6
Malaysia	17.8	17.1	14.8	15.3	15.8	14.5
Kenya	6.2	5.2	7.7	8.2	7.6	8.6
Ghana	15.5	15.3	11.1	8.0	14.4	9.4
Nigeria	6.9	4.1	1.5	5.0	6.8	6.3
Canada	4.3	4.0	4.6	5.1	6.1	6.4
United States	6.8	6.6	7.2	10.6	10.8	11.3
World	8.2	7.4	7.6	8.1	8.5	8.4

Source: United Kingdom. Board of Trade
Journal, 26 January 1968.

TABLE C 17

UNITED KINGDOM: NET EARNINGS IN SOUTH AFRICA BY INDUSTRY
(£ millions)

	<u>1965</u>	<u>1966</u>
Mining	4.4	9.7
Electrical and mechanical engineering	3.0	4.2
Vehicles and shipbuilding	1.0	1.2
Other manufacturing	24.4	24.4
Construction	1.7	1.3
Distribution	8.5	7.0
Transport and communications	0.5	-
Shipping	-	0.9
Other (including insurance and banking)	13.1	10.5
TOTAL	56.9	59.6

Source: United Kingdom, Board of Trade
Journal, 19 July 1968.

TABLE C. 18

UNITED STATES: VALUE OF PRIVATE DIRECT INVESTMENT OVERSEAS (END-YEARS)

(in millions of dollars)

	<u>1959</u>	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
South Africa	323	286	304	357	411	467	529	601	666	692
change ¹	-	-37	18	53	54	56	62	72	65	26
Total Africa	833	925	1,070	1,271	1,426	1,685	1,918	2,078	2,273	2,673
change ¹	-	92	145	201	155	259	233	160	195	400
Total - All Areas	29,827	32,778	34,684	37,226	40,686	44,328	49,328	54,562	59,486	64,756
(percentage)										
South Africa	1.1	0.9	0.9	1.0	1.0	1.1	1.1	1.1	1.1	1.1
Total Africa	2.8	2.8	3.1	3.4	3.5	3.8	3.9	3.8	3.8	4.1
Total - All Areas	100	100	100	100	100	100	100	100	100	100

Source: United States Department of Commerce,
Survey of Current Business

1. The annual change in value is equal to the annual flow of net investment.

TABLE C. 19

UNITED STATES: VALUE OF PRIVATE DIRECT INVESTMENT IN SOUTH AFRICA BY MAJOR INDUSTRY 1
(END-YEARS)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
(in millions of dollars)										
Manufacturing	109	108	102	126	158	193	237	271	304	332
Petroleum	-	-	-	-	-	-	126	138	139	147
Mining and smelting	87	46	50	60	63	68	65	73	99	78
Trade	28	31	39	39	47	49	63	76	88	96
Other	98	100	113	128	142	158	38	42	36	38
TOTAL	323	286	304	353	411	467	529	600	666	692
(percentages)										
Manufacturing	34	38	34	36	39	41	45	45	46	48
Petroleum	-	-	-	-	-	-	24	23	21	21
Mining and smelting	27	16	16	17	15	15	12	12	15	11
Trade	9	11	13	11	11	10	12	13	13	14
Other	30	35	37	36	35	34	7	7	5	5
TOTAL 3	100	100	100	100	100	100	100	100	100	100

1. Data one based on book value

Source: United States Department of Commerce, Survey of Current Business, October 1968 and October 1969.

2. From 1959 to 1964 data on the petroleum industry was included in other industries. Book values of private direct investment in petroleum for 1957 and 1958 were \$57 millions and \$63 millions respectively.

3. Totals may not add due to rounding.

TABLE C 2

UNITED STATES: DIRECT INVESTMENT EARNINGS 1960-1968

(in millions of dollars)

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
South Africa	50	61	71	82	87	101	124	128	120
Total Africa	33	31	81	166	346	376	415	421	671
Total - all areas	3,566	3,815	4,235	4,587	5,061	5,460	5,680	6,034	7,010
(percentages)									
South Africa	1.4	1.6	1.7	1.8	1.7	1.8	2.2	2.1	1.7
Total Africa	0.9	0.8	1.9	3.6	6.7	6.9	7.3	6.8	9.6
Total - all areas	100	100	100	100	100	100	100	100	100

Source: United States Department of Commerce,
Survey of Current Business.

TABLE C 21

UNITED STATES: AVERAGE RATES OF RETURN ON DIRECT INVESTMENT OVERSEAS, 1960-1968 ¹
(percentages)

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>
South Africa	17.5	19.6	19.9	20.0	18.6	19.1	20.6	19.2	17.2
Total Africa	3.6	2.9	6.4	11.6	20.5	19.6	20.0	18.4	25.1
Total World	10.9	11.0	11.4	11.3	11.4	11.1	10.4	10.1	10.8

Source: United States Department of Commerce, Survey of Current Business.

1. Percentage ratios of earnings to the value of investment.

V. THE EMERGENCE OF A SOUTHERN AFRICAN BLOC

158. South Africa's position internationally is a difficult one. Africa is now largely independent. More than a century and a half of colonial rule has come to an end, and independence is naturally regarded as a great achievement by all African nations. South Africa, however, preserves the worst aspects of colonial rule. Indeed, the practices of colonialism have been carried to grotesque lengths in that country. The mass of the people are literally living in a forced labour camp and under a white supremacist Government. The South African régime sets itself against everything which independent Africa has sought to attain. It is almost universally seen as an outcast among nations.

159. South Africa is attempting to hold back the clock. It cannot succeed in that attempt for many more years. The simple reason for this is that the world will not let it. The United Nations is moving gradually towards a confrontation with South Africa. The guerilla forces of the African independence movements are already fighting on southern African territory. They have the backing of the Organization of African Unity and many other nations are helping in a variety of ways. The situation within South Africa appears to be calm. That calm, however, is assured only by the massive machinery of a repressive State. Domestically, South Africa is a tinder box. It could scarcely be anything else. When the temperature rises, it will explode. There will inevitably be an armed conflict in southern Africa. The South African régime will as inevitably be overthrown. It is only a matter of time.

160. The whites in South Africa have no wish to change their "way of life". They would not know how to do so. They do know, however, that their situation is precarious. Psychologically, South Africa is living in a state of siege. The Government's major preoccupation is with finding means of putting off the inevitable. It believes that in the immediate future South Africa will be safe. It is enormously powerful. It has large and well-equipped armed forces. The problem has always been, however, what to do in the long run. South Africans have always asked whether there was not some way in which Africa and the world might be made to come to terms with apartheid. In the course of the last decade, South Africa has begun to elaborate a number of related policies which promise a solution.

161. The new strategy is simple but it is being subtly applied. Its point of departure is South Africa's economic strength. South Africa is by far the most economically powerful country on the African continent. Most other African nations, especially those in sub-Saharan Africa, are exceedingly poor. They desperately need to make economic progress. Their hopes of escaping from poverty without substantial aid from outside are slight. Per capita income in a number of countries is falling. There has been scarcely any real development. Aid from the major Powers is becoming more difficult to get, and it has many strings attached to it. South Africa can offer these countries "co-operation for development".

162. Some years ago, Prime Minister Verwoerd suggested the establishment of a Southern African Common Market. This was to be a prelude to the development of

a Community of Southern African States. South Africa is now working vigorously towards that first objective. It is attempting to draw the various States in southern Africa into closer orbit. It is proposing a programme of diplomatic and economic co-operation with Botswana, Lesotho, Swaziland, Angola, Mozambique, Rhodesia, Malawi and ultimately Zambia. This "Third Africa", as it is being called, would have an area of 2 million square miles and a population of 45 million.

163. What South Africa appears to be proposing is mutual assistance in development based on a recognition of political independence. The main aim is greater economic interdependence in the whole region. There is no doubt that South African trade with countries in this region is increasing rapidly. So is South African investment in them. South Africa has signed a trade pact with Malawi. It has military arrangements with the Portuguese dependencies. The Cabora Bassa hydro-electric project is supposed one day to link a number of countries in the area. A road is being driven through Namibia to Angola's port city of Luanda. A gas pipeline is being built between Mozambique and the Reef. Everywhere economic links are developing which had not been thought possible a decade ago.

164. South Africa is offering to help certain independent African States. There is, however, an obvious *quid pro quo*. The South Africans describe what is happening as the "birth of a strong regionalism". But they note with pleasure that it is a regionalism in which "racial affairs are taking a back seat". This "blurring of old animosities" is the price which African States must pay for the promise of progress. And the promises are impressive. "If allowed to proceed unhindered, developments in this area could lead to the creation of a new multinational giant, the Europe of Africa, which will one day exercise a profound influence on developments in Africa, if not in the world." ^{39/} If the independent States of southern Africa come to the conclusion that this kind of co-operation can in fact help them a great deal, then South Africa may well succeed in blunting the thrust of the national liberation movements.

165. There is already a solid basis for a future southern African bloc. The reason is easy enough to see. The countries which might be said to constitute the core group are either allies of South Africa or States and Territories which are highly dependent on South Africa. They are, first of all, Angola and Mozambique. These colonies are already closely linked to South Africa in a variety of ways. They are committed, under their present régimes, to resist any change in the *status quo* in the region. Namibia is under South African occupation. Botswana, Lesotho and Swaziland are economically dominated by South Africa. Rhodesia has chosen the path of South Africa on its own. It is another white minority *apartheid* State. These States and Territories may be counted upon to work for greater solidarity in the region. For the politically independent African States among them, that will not be easy. But these States have very little bargaining power against South Africa.

166. The crucial question, however, is whether independent States like Malawi, Zambia and the Democratic Republic of the Congo will be drawn into closer association with South Africa. The extension and consolidation of the ties between South Africa and the core group of countries will not really change the political situation in Africa. They are far less independent than they may

^{39/} E. Rhoadie, The Third Africa (Cape Town, 1968), p. 3.

believe. But Zambia and other countries have taken a strong line against South Africa. They represent the forces which are committed to the ultimate overthrow of apartheid on the continent. Zambia and the Congo, furthermore, are strong and relatively well off. If they should come under South Africa's influence in any important way, they might be forced to abandon the positions which they have taken in the United Nations, in the Organization of African Unity and elsewhere. The liberation movements would find it much more difficult to operate. The whole political situation in Africa would change.

167. There is a real danger that South African influence in southern Africa will increase. South Africa talks of growing trade, aid and investment as growing "economic interdependence" and some African nations see it as that. But it is much more. The ultimate consequences of an increasingly close association with South Africa must be assessed in terms of power. South Africa talks of "peaceful co-existence on the basis of equality" but there is very little of equality in the relations between it and the former High Commission Territories. South Africa is already the dominant Power in the area. It completely dominates the economy of the sub-continent. More than 74 per cent of production in southern Africa originates in the Republic and only 26 per cent in the other States and Territories. The industry, employment opportunities and capital resources of the area are largely in South Africa. As the Bureau for Economic Analysis and Policy recently stated, "The most casual inspection (of the facts) would reveal the extent to which each nation is dependent for its income on the productive processes within the border of the Republic of South Africa rather than on its own resources or economic system." 40/

168. South Africa is therefore seeking a closer association among the nations of the area, because it knows that its power will make it possible to exercise an important influence over them. The situation is seen in very basic terms. "On its part South Africa dominates the Third Africa to the same, if not a greater, extent that the United States enjoys pre-eminence in the Americas." 41/ What is sometimes blandly seen as a "common market" is therefore really a sphere of influence. It is South Africa's intention to turn this sphere into a kind of neo-colonial fiefdom. It is not the obvious desirability of mutual benefit which is producing "harmonious co-operation with the Republic" in this situation. It is the weight of South Africa's power and the lack of alternatives. This is openly recognized. President Seretse Khama stated in 1966: "Our railways are Rhodesian, our ports are South African. We must trade with our neighbours and to trade with other countries our goods must pass through our neighbouring countries. To live in these circumstances, we must be realistic, not emotional." 42/

169. Rhodesia's unilateral declaration of independence has greatly strengthened South Africa in its efforts to consolidate its influence in the sub-continent. Rhodesia is now under an apartheid régime. It is closely linked with South Africa and with other countries in the area. Its economy is a wealthy one. It

40/ Lombard, Stadler and Van der Merwe, The Concept of Economic Co-operation in Southern Africa (Pretoria, 1968), p. 29.

41/ See Rhoadie, op. cit., p. 3.

42/ The Star, Johannesburg, 13 February 1966, cited in Rhoadie, op. cit., p. 45.

can contribute its power in the struggle to resist change. Its peculiar relation to Zambia gives the countries of the bloc an important hold over that country which will be the key in determining whether South Africa's plans for a "Third Africa" will ultimately succeed. If Zambia should succeed in forging a northern alliance, the line will be drawn at the Zambezi. In that case, South Africa will gain very little time by its present efforts. At the moment, however, Rhodesia and South Africa can create severe difficulties for Zambia.

170. The idea of a southern African bloc offers a peculiar double advantage to South Africa. The obvious advantage is the political one that countries under South African influence will abandon their active opposition to apartheid. The consolidation of the bloc will serve to stabilize the whole area politically. This strategy might well work for another decade, or even longer. There is also a second advantage, which is by no means unimportant. South Africa has now reached a high level of industrial development. But its domestic market is a restricted one. It will remain so under apartheid, for that policy means poverty for the large majority of non-whites. Poor people cannot buy the goods which South Africa must produce if its economy is to grow. The growth of trade within the southern African bloc therefore offers South Africa the opportunity of entering new markets. South Africa does not really care whether Africans are able to purchase expensive commodities if those Africans are not living in the Republic. The plan for a "Third Africa" might well make it possible for South Africa to overcome the limitations of the domestic market without abandoning apartheid. South African exports to Africa are already growing very rapidly.

171. South Africa is now expanding its economic links with all the countries in the sub-continent. Its trade is increasing rapidly. Zambia, for instance, is now heavily dependent on imports from South Africa. In other countries, South African traders are beginning to take over the markets which were previously dominated by the British. This is just one more reflection of the way the Republic's industrial development has propelled it into other countries. South Africa is offering various kinds of assistance to the poorer countries in the area. It is helping especially with the financing of infrastructure. In the Cabora Bassa scheme, it is unifying and centralizing the supply of electricity for a vast region. Countries in the zone of influence of this project will find themselves much more dependent upon South Africa. Private investment is also increasing rapidly. South African companies have reached as far north as Mauritania to exploit new mineral resources. Total investments in Africa were in the hundreds of millions at the beginning of the nineteen-sixties. They have probably more than doubled since then. All these changes create new links which are essentially ones of dependence for those with whom South Africa deals.

172. Whether South Africa's plans for a "Third Africa" will succeed no one can tell at this moment. That will depend partly on the extent to which countries in the area are willing to increase their economic links with it. Many of them have very little choice at present but there are ways of preventing South Africa from gradually enveloping the independent African States. The most important of these is to build a strong alliance of States north of the Zambezi. The development of the present alliance between the United Republic of Tanzania and Zambia might be the single most important step in stopping the expansion of South African influence. From that base much could be done for many countries

which South Africa is now trying to dominate or influence. The success of that alliance would require significant assistance from other countries. For Zambia has many economic problems to overcome and the United Republic of Tanzania cannot help it. It is dependent upon Rhodesia in many ways. And that dependence must be reduced.

173. It should be clear that what is at stake is the future of a large part of Africa. South Africa's basic purpose in putting forward its new programme is to protect itself. But in order to do so, it must first undermine the independence of the black African States. So it is not simply a question of keeping the whole question of apartheid open. The consequences of South African policy within independent African countries will also be very serious. When South Africans liken their country to the United States in South America, it is no accident. That is the kind of influence which South Africa would like to exert. It should be remembered, however, that many economists, notably Rene Dumont, have warned against the "South Americanization" of Africa, and what seems to be the "economic progress" which South Africa seeks to promote may turn out not to be economic progress at all. There is abundant evidence that the kind of growth now taking place in the region is leading away from industrialization and not towards it. That has already been the experience of South America. It would be a double tragedy if the same thing should happen in Africa so that "racial affairs may take a back seat".

TABLE D.1

SOUTH AFRICAN TRADE WITH AFRICA
(in millions of rands)

	1960	1961	1962	1963	1964	1965	1966	1967	1968
Total South African exports	801.3	852.8	867.4	915.8	955.0	1,060.9	1,205.5	1,364.9	1,506.3
Exports to African Countries	141.7	129.7	119.6	107.2	113.9	147.1	196.3	223.4	248.0
Percentage of Exports to African Countries	17.7	15.2	13.8	11.7	11.9	13.9	16.3	16.4	16.5
Total South African Imports	1,111.1	1,004.8	1,022.2	1,202.9	1,529.9	1,756.4	1,645.5	1,919.3	1,883.1
Imports from African Countries	76.9	68.8	70.5	79.6	90.1	108.9	128.3	141.3	120.2
Percentage of Imports from African Countries	6.8	6.8	6.9	6.6	5.9	6.2	7.9	7.4	6.4

Source: Foreign Trade Statistics

TABLE D 2

AFRICA: IMPORTS FROM SOUTH AFRICA IN 1968
(in millions of rands)

Total South African exports to Africa, f.o.b.	248.0
Total Exports plus 10% (= c.i.f. equivalent)	273.0
Imports by Zambia, c.i.f.	76.3
Imports by Malawi, c.i.f.	5.5
Imports by Angola, c.i.f.	5.5
Imports by Mozambique, c.i.f.	19.8
Sub Total:	107.1
Unaccounted imports from South Africa	approximately 166.0
Total Rhodesian imports, c.i.f.	103.5
Estimated Rhodesian imports from South Africa ^{1/}	81.0
Probable imports from South Africa by remaining African Countries	85.0

^{1/} The Annual Supplement for 1969 of the Economist Intelligence Unit Quarterly Economic Review for Rhodesia, Zambia and Malawi estimated Rhodesian imports from South Africa at 80-85% of the total.

TABLE D 3

SOUTH AFRICAN EXPORTS TO AFRICA BY SITC SECTIONS 1964 AND 1968
(in millions of rands)

SITC CODE	DESCRIPTION	1964	1968
0	Food and live animals	21.6 (7.3 Rhodesia) (3.6 Zambia)	28.5
1	Beverages and tobacco	0.7	1.2
2	Crude materials, inedible	-	-
3	Mineral Fuels etc.	6.4 (3.7 Mozambique)	13.9
4	Animal and Vegetable oils and fats	-	-
5	Chemicals	15.6 (7.4 Rhodesia) (6.0 Zambia)	32.9
6	Manufactured goods, by materials	34.5 (18.8 Rhodesia) (8.4 Zambia)	71.1
7	Machinery and transport, equipment	22.4 (9.0 Rhodesia) (8.2 Zambia) (3.1 Mozambique)	74.4
8	Miscellaneous manufactured goods	8.4 (5.5 Rhodesia) (2.2 Zambia)	12.8
9	Commodities, transactions, n.e.s.	-	-
	TOTAL Identified by sections	110.6	232.8
	Unaccounted	3.2	15.2
	TOTAL Exports	113.8	248.0

Source: Foreign Trade Statistics.

TABLE D 4

SOUTH AFRICAN IMPORTS FROM AFRICA BY SITC SECTIONS 1964 AND 1968

SITC CODE	DESCRIPTION	1964	1968
0	Food and live animals	8.1	23.8
1	Beverages and tobacco	6.4 (6.1 Rhodesia)	6.7
2	Crude materials, inedible	35.9	32.0
3	Mineral Fuels, etc.	-	4.5
4	Animal and Vegetable oils and fats	1.3	1.6
5	Chemicals	-	-
6	Manufactured goods by materials	28.6 (19.4 Zambia)	31.6
7	Machinery and transport, equipment	-	-
8	Miscellaneous manufactured goods	-	12.4
9	Commodities, transactions n.e.s.	-	-
	TOTAL Identified by Sections	80.3	112.6
	Unaccounted	9.8	7.5
	TOTAL Imports	90.1	120.1

Source: Foreign Trade Statistics

TABLE D 5

IMPORTANCE OF SOUTH AFRICAN EXPORTS TO AFRICA BY SITC SECTIONS
(in millions of rands)

<u>SITC CODE</u>	<u>DESCRIPTION</u>	<u>TOTAL EXPORTS 1968</u>	<u>EXPORTS TO AFRICA 1968</u>	<u>% OF TOTAL TO AFRICA</u>
0	Food and live animals	373.7	28.5	7.6
1	Beverages and tobacco	13.2	1.2	9.1
2	Crude materials, inedible	338.3	-	-
3	Mineral Fuels etc.	77.8	13.9	17.9
4	Animal and Vegetable oils and fats	7.6	-	-
5	Chemicals	52.0	32.9	63.3
6	Manufactured goods by materials	461.4	71.1	15.4
7	Machinery and transport equipment	91.0	74.4	81.8
8	Miscellaneous manufactured goods	16.0	12.8	80.0
9	Commodities, transactions, n.e.s.	70.3	-	-

VI. CONCLUSIONS

174. South Africa is now an extraordinarily rich country with important natural resources and an extensive industrial base. The per capita income of its white citizens is R 1,140 (\$1,596) per year. 44/ All this wealth has been achieved in a relatively short time. Fifty years ago South Africa was considered a backward country. The most striking fact about the Republic, however, is that the large majority of the population lives in abject poverty. The average per capita income of Africans in 1969 was R 49 (\$69). The extent and severity of poverty must raise the question whether South Africa really is "developed".

175. The poverty of Africans, and of other non-whites, is the direct result of the system of apartheid. This system denies Africans the possibility of any kind of economic independence. It denies them all the rights which are regarded as normal in civilized countries. It renders them completely helpless. With inadequate land and the status of rightless migrants in "white areas", Africans are compelled to accept whatever labour is offered them by the state apparatus which regulates the labour "market". The whole impact of apartheid policy is such as to make it impossible for Africans to work in anything but an unskilled capacity.

176. South Africa is, in fact, a forced labour camp, so far as Africans are concerned. The net result of the laws and regulations which constitute the apartheid system is to create an indirect system of forced labour. The system was condemned as such by the United Nations International Labour Organization Ad Hoc Committee on Forced Labour in 1953. The changes which have taken place in the laws regarding Africans since then make the system even more oppressive. The question inevitably arises whether this system is in fact less oppressive than direct slavery. For under apartheid suffering is imposed upon a whole population indiscriminately in order to force the able-bodied to work. Forty per cent of the African population presently lives on the border of starvation: this situation is necessary if the system of apartheid is to function "efficiently".

177. Apartheid has been an important stimulus to the kind of economic development which has taken place in South Africa. The basic purpose of apartheid is to create an abundant supply of cheap labour which is important for every industry and gives rise to exceedingly high returns to capital. If African workers, who furnish 70 per cent of the labour in the economy, were paid what whites are paid for similar jobs, the cost of production in every commercial operation would rise significantly. High rates of return are no doubt due in part to the monopolistic position which certain South African industries enjoy on the world market. This only allows them however to charge high prices. Costs would still be increased, and profit margins reduced, if Africans were paid adequate wages.

178. The systematic exploitation of African labour has also undoubtedly helped to accelerate the normal pace of development. The high profits made possible by cheap labour have been an important stimulus to expansion. Lower profits would have hindered expansion. In an important sense, therefore, the whole South African boom has been built on the exploitation of forced labour.

44/ Financial Mail, Johannesburg, 18 April 1969, p. 169.

179. Several countries have an important stake in the status quo in South Africa. Britain has very large investments in that country which constitute 12 per cent of its total foreign investments. These yield very high rates of return and an annual income which is of importance not only to large British corporations but also to the British balance of payments. Great Britain also trades extensively with South Africa, although its trade is not of critical importance. Important British concerns do, however, depend upon the South African export market.

180. Trade and investment with South Africa have been rising very rapidly over the last decade. Western European countries have increased their exports to South Africa by very large amounts. They are also increasing investments there. Most outward investment takes the form of direct participation in firms established, or being established, in South Africa. The growth of economic relations with South Africa has been taking place despite the repeated condemnation of that country by the United Nations. There are two basic economic reasons for this development. The first is the commercial one that South African investments offer high rates of return. And export markets are now easy to find. The second reason, affecting investments primarily, is that South Africa appears to be politically stable. There is thus greater security in investing there.

181. South Africa is critically dependent upon the western industrial countries for capital and for certain kinds of imports. It has been a net capital importer for some years. And the gross flows of foreign investment are probably crucial to particular sectors in the economy, especially to manufacturing. Foreigners now control 22 per cent of South African industry. South Africa purchases large quantities of expensive capital equipment overseas, primarily from Great Britain, the United States and West Germany. It would not be possible for South Africa to maintain anything like present rates of growth without such imports, which constitute a significant percentage of total imports.

182. The South African economy has achieved a certain degree of self-sufficiency in production. But South African industry would be hard pressed to produce adequate quantities of sophisticated capital goods. The rapid industrialization of the last decade has been greatly facilitated by imports of capital and machinery. This means that foreign countries have played a crucial role in strengthening economically a regime which rests upon a system of forced labour.

183. As indicated in Chapter IV, the United States and Great Britain both have an important political stake in the status quo in southern Africa. The political situation in southern Africa is basically unstable. All the independent African countries are opposed to apartheid. The Nationalist Government, however, will never abandon that policy. There will inevitably be an armed conflict in South Africa. The situation is now so polarized that the African Government likely to emerge from that conflict will inevitably be somewhat hostile to Western interests. This possibility is a standing threat to Western investments in South Africa.

184. South Africa has now embarked upon a policy designed to neutralize the opposition to apartheid in Africa. It is attempting to develop its relations with independent African countries in order to create a community of nations in southern Africa which can live in "peaceful co-existence". It is offering more trade, aid and investment to those countries. It is bound, however, to dominate any such association of nations. Countries participating in such an association would run the risk of seeing their development arrested. That is the meaning of Dumont's warning against the "South Americanization" of Africa.

APPENDIX 12
INTERNATIONAL LABOUR CONFERENCE

Convention 105

**CONVENTION CONCERNING THE ABOLITION
OF FORCED LABOUR**

The General Conference of the International Labour Organisation,
Having been convened at Geneva by the Governing Body of the International Labour Office, and having met in its Fortieth Session on 5 June 1957, and

Having considered the question of forced labour, which is the fourth item on the agenda of the session, and

Having noted the provisions of the Forced Labour Convention, 1930, and

Having noted that the Slavery Convention, 1926, provides that all necessary measures shall be taken to prevent compulsory or forced labour from developing into conditions analogous to slavery and that the Supplementary Convention on the Abolition of Slavery, the Slave Trade and Institutions and Practices Similar to Slavery, 1956, provides for the complete abolition of debt bondage and serfdom, and

Having noted that the Protection of Wages Convention, 1949, provides that wages shall be paid regularly and prohibits methods of payment which deprive the worker of a genuine possibility of terminating his employment, and

Having decided upon the adoption of further proposals with regard to the abolition of certain forms of forced or compulsory labour constituting a violation of the rights of man referred to in the Charter of the United Nations and enunciated by the Universal Declaration of Human Rights, and

Having determined that these proposals shall take the form of an international Convention,

adopts this twenty-fifth day of June of the year one thousand nine hundred and fifty-seven the following Convention, which may be cited as the Abolition of Forced Labour Convention, 1957 :

Article 1

Each Member of the International Labour Organisation which ratifies this Convention undertakes to suppress and not to make use of any form of forced or compulsory labour—

- (a) as a means of political coercion or education or as a punishment for holding or expressing political views or views ideologically opposed to the established political, social or economic system ;

- (b) as a method of mobilising and using labour for purposes of economic development ;
- (c) as a means of labour discipline ;
- (d) as a punishment for having participated in strikes ;
- (e) as a means of racial, social, national or religious discrimination.

Article 2

Each Member of the International Labour Organisation which ratifies this Convention undertakes to take effective measures to secure the immediate and complete abolition of forced or compulsory labour as specified in Article 1 of this Convention.

Article 3

The formal ratifications of this Convention shall be communicated to the Director-General of the International Labour Office for registration.

Article 4

1. This Convention shall be binding only upon those Members of the International Labour Organisation whose ratifications have been registered with the Director-General.

2. It shall come into force twelve months after the date on which the ratifications of two Members have been registered with the Director-General.

3. Thereafter, this Convention shall come into force for any Member twelve months after the date on which its ratification has been registered.

Article 5

1. A Member which has ratified this Convention may denounce it after the expiration of ten years from the date on which the Convention first comes into force, by an act communicated to the Director-General of the International Labour Office for registration. Such denunciation shall not take effect until one year after the date on which it is registered.

2. Each Member which has ratified this Convention and which does not, within the year following the expiration of the period of ten years mentioned in the preceding paragraph, exercise the right of denunciation provided for in this Article, will be bound for another period of ten years and, thereafter, may denounce this Convention at the expiration of each period of ten years under the terms provided for in this Article.

Article 6

1. The Director-General of the International Labour Office shall notify all Members of the International Labour Organisation of the registration of all ratifications and denunciations communicated to him by the Members of the Organisation.

2. When notifying the Members of the Organisation of the registration of the second ratification communicated to him, the Director-General shall draw the attention of the Members of the Organisation to the date upon which the Convention will come into force.

Article 7

The Director-General of the International Labour Office shall communicate to the Secretary-General of the United Nations for registration in accordance with article 102 of the Charter of the United Nations full particulars of all ratifications and acts of denunciation registered by him in accordance with the provisions of the preceding Articles.

Article 8

At such times as it may consider necessary the Governing Body of the International Labour Office shall present to the General Conference a report on the working of this Convention and shall examine the desirability of placing on the agenda of the Conference the question of its revision in whole or in part.

Article 9

1. Should the Conference adopt a new Convention revising this Convention in whole or in part, then, unless the new Convention otherwise provides—

- (a) the ratification by a Member of the new revising Convention shall *ipso jure* involve the immediate denunciation of this Convention, notwithstanding the provisions of Article 5 above, if and when the new revising Convention shall have come into force ;
- (b) as from the date when the new revising Convention comes into force this Convention shall cease to be open to ratification by the Members.

2. This Convention shall in any case remain in force in its actual form and content for those Members which have ratified it but have not ratified the revising Convention.

Article 10

The English and French versions of the text of this Convention are equally authoritative.

Convention 29**CONVENTION CONCERNING FORCED OR
COMPULSORY LABOUR**

The General Conference of the International Labour Organisation,

Having been convened at Geneva by the Governing Body of the International Labour Office, and having met in its Fourteenth Session on 10 June 1930, and

Having decided upon the adoption of certain proposals with regard to forced or compulsory labour, which is included in the first item on the agenda of the Session, and

Having determined that these proposals shall take the form of an international Convention,

adopts this twenty-eighth day of June of the year one thousand nine hundred and thirty the following Convention, which may be cited as the Forced Labour Convention, 1930, for ratification by the Members of the International Labour Organisation in accordance with the provisions of the Constitution of the International Labour Organisation :

Article 1

1. Each Member of the International Labour Organisation which ratifies this Convention undertakes to suppress the use of forced or compulsory labour in all its forms within the shortest possible period.

2. With a view to this complete suppression, recourse to forced or compulsory labour may be had, during the transitional period, for public purposes only and as an exceptional measure, subject to the conditions and guarantees hereinafter provided.

3. At the expiration of a period of five years after the coming into force of this Convention, and when the Governing Body of the International Labour Office prepares the report provided for in Article 31 below, the said Governing Body shall consider the possibility of the suppression of forced or compulsory labour in all its forms without a further transitional period and the desirability of placing this question on the agenda of the Conference.

Article 2

1. For the purposes of this Convention the term "forced or compulsory labour" shall mean all work or service which

is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily.

2. Nevertheless, for the purposes of this Convention, the term "forced or compulsory labour" shall not include—

- (a) any work or service exacted in virtue of compulsory military service laws for work of a purely military character ;
- (b) any work or service which forms part of the normal civic obligations of the citizens of a fully self-governing country ;
- (c) any work or service exacted from any person as a consequence of a conviction in a court of law, provided that the said work or service is carried out under the supervision and control of a public authority and that the said person is not hired to or placed at the disposal of private individuals, companies or associations ;
- (d) any work or service exacted in cases of emergency, that is to say, in the event of war or of a calamity or threatened calamity, such as fire, flood, famine, earthquake, violent epidemic or epizootic diseases, invasion by animal, insect or vegetable pests, and in general any circumstance that would endanger the existence or the well-being of the whole or part of the population ;
- (e) minor communal services of a kind which, being performed by the members of the community in the direct interest of the said community, can therefore be considered as normal civic obligations incumbent upon the members of the community, provided that the members of the community or their direct representatives shall have the right to be consulted in regard to the need for such services.

Article 3

For the purposes of this Convention the term "competent authority" shall mean either an authority of the metropolitan country or the highest central authority in the territory concerned.

Article 4

1. The competent authority shall not impose or permit the imposition of forced or compulsory labour for the benefit of private individuals, companies or associations.

2. Where such forced or compulsory labour for the benefit of private individuals, companies or associations exists at the date on which a Member's ratification of this Convention is registered by the Director-General of the International Labour Office, the Member shall completely suppress such forced or compulsory labour from the date on which this Convention comes into force for that Member.

Article 5

1. No concession granted to private individuals, companies or associations shall involve any form of forced or compulsory labour for the production or the collection of products which such private individuals, companies or associations utilise or in which they trade.

2. Where concessions exist containing provisions involving such forced or compulsory labour, such provisions shall be rescinded as soon as possible, in order to comply with Article 1 of this Convention.

Article 6

Officials of the administration, even when they have the duty of encouraging the populations under their charge to engage in some form of labour, shall not put constraint upon the said populations or upon any individual members thereof to work for private individuals, companies or associations.

Article 7

1. Chiefs who do not exercise administrative functions shall not have recourse to forced or compulsory labour.

2. Chiefs who exercise administrative functions may, with the express permission of the competent authority, have recourse to forced or compulsory labour, subject to the provisions of Article 10 of this Convention.

3. Chiefs who are duly recognised and who do not receive adequate remuneration in other forms may have the enjoyment of personal services, subject to due regulation and provided that all necessary measures are taken to prevent abuses.

Article 8

1. The responsibility for every decision to have recourse to forced or compulsory labour shall rest with the highest civil authority in the territory concerned.

2. Nevertheless, that authority may delegate powers to the highest local authorities to exact forced or compulsory labour which does not involve the removal of the workers from their place of habitual residence. That authority may also delegate, for such periods and subject to such conditions as may be laid down in the regulations provided for in Article 23 of this Convention, powers to the highest local authorities to exact forced or compulsory labour which involves the removal of the workers from their place of habitual residence for the purpose of facilitating the movement of officials of the administration, when on duty, and for the transport of Government stores.

Article 9

Except as otherwise provided for in Article 10 of this Convention, any authority competent to exact forced or compulsory

labour shall, before deciding to have recourse to such labour, satisfy itself—

- (a) that the work to be done or the service to be rendered is of important direct interest for the community called upon to do the work or render the service ;
- (b) that the work or service is of present or imminent necessity ;
- (c) that it has been impossible to obtain voluntary labour for carrying out the work or rendering the service by the offer of rates of wages and conditions of labour not less favourable than those prevailing in the area concerned for similar work or service ; and
- (d) that the work or service will not lay too heavy a burden upon the present population, having regard to the labour available and its capacity to undertake the work.

Article 10

1. Forced or compulsory labour exacted as a tax and forced or compulsory labour to which recourse is had for the execution of public works by chiefs who exercise administrative functions shall be progressively abolished.

2. Meanwhile, where forced or compulsory labour is exacted as a tax, and where recourse is had to forced or compulsory labour for the execution of public works by chiefs who exercise administrative functions, the authority concerned shall first satisfy itself—

- (a) that the work to be done or the service to be rendered is of important direct interest for the community called upon to do the work or render the service ;
- (b) that the work or the service is of present or imminent necessity ;
- (c) that the work or service will not lay too heavy a burden upon the present population, having regard to the labour available and its capacity to undertake the work ;
- (d) that the work or service will not entail the removal of the workers from their place of habitual residence ;
- (e) that the execution of the work or the rendering of the service will be directed in accordance with the exigencies of religion, social life and agriculture.

Article 11

1. Only adult able-bodied males who are of an apparent age of not less than 18 and not more than 45 years may be called upon for forced or compulsory labour. Except in respect of the kinds of labour provided for in Article 10 of this Convention, the following limitations and conditions shall apply :

- (a) whenever possible prior determination by a medical officer appointed by the administration that the persons con-

cerned are not suffering from any infectious or contagious disease and that they are physically fit for the work required and for the conditions under which it is to be carried out ;

- (b) exemption of school teachers and pupils and of officials of the administration in general ;
- (c) the maintenance in each community of the number of adult able-bodied men indispensable for family and social life ;
- (d) respect for conjugal and family ties.

2. For the purposes of sub-paragraph (c) of the preceding paragraph, the regulations provided for in Article 23 of this Convention shall fix the proportion of the resident adult able-bodied males who may be taken at any one time for forced or compulsory labour, provided always that this proportion shall in no case exceed 25 per cent. In fixing this proportion the competent authority shall take account of the density of the population, of its social and physical development, of the seasons, and of the work which must be done by the persons concerned on their own behalf in their locality, and, generally, shall have regard to the economic and social necessities of the normal life of the community concerned.

Article 12

1. The maximum period for which any person may be taken for forced or compulsory labour of all kinds in any one period of twelve months shall not exceed sixty days, including the time spent in going to and from the place of work.

2. Every person from whom forced or compulsory labour is exacted shall be furnished with a certificate indicating the periods of such labour which he has completed.

Article 13

1. The normal working hours of any person from whom forced or compulsory labour is exacted shall be the same as those prevailing in the case of voluntary labour, and the hours worked in excess of the normal working hours shall be remunerated at the rates prevailing in the case of overtime for voluntary labour.

2. A weekly day of rest shall be granted to all persons from whom forced or compulsory labour of any kind is exacted and this day shall coincide as far as possible with the day fixed by tradition or custom in the territories or regions concerned.

Article 14

1. With the exception of the forced or compulsory labour provided for in Article 10 of this Convention, forced or compulsory labour of all kinds shall be remunerated in cash at rates not less than those prevailing for similar kinds of work either

in the district in which the labour is employed or in the district from which the labour is recruited, whichever may be the higher.

2. In the case of labour to which recourse is had by chiefs in the exercise of their administrative functions, payment of wages in accordance with the provisions of the preceding paragraph shall be introduced as soon as possible.

3. The wages shall be paid to each worker individually and not to his tribal chief or to any other authority.

4. For the purpose of payment of wages the days spent in travelling to and from the place of work shall be counted as working days.

5. Nothing in this Article shall prevent ordinary rations being given as a part of wages, such rations to be at least equivalent in value to the money payment they are taken to represent, but deductions from wages shall not be made either for the payment of taxes or for special food, clothing or accommodation supplied to a worker for the purpose of maintaining him in a fit condition to carry on his work under the special conditions of any employment, or for the supply of tools.

Article 15

1. Any laws or regulations relating to workmen's compensation for accidents or sickness arising out of the employment of the worker and any laws or regulations providing compensation for the dependants of deceased or incapacitated workers which are or shall be in force in the territory concerned shall be equally applicable to persons from whom forced or compulsory labour is exacted and to voluntary workers.

2. In any case it shall be an obligation on any authority employing any worker on forced or compulsory labour to ensure the subsistence of any such worker who, by accident or sickness arising out of his employment, is rendered wholly or partially incapable of providing for himself, and to take measures to ensure the maintenance of any persons actually dependent upon such a worker in the event of his incapacity or decease arising out of his employment.

Article 16

1. Except in cases of special necessity, persons from whom forced or compulsory labour is exacted shall not be transferred to districts where the food and climate differ so considerably from those to which they have been accustomed as to endanger their health.

2. In no case shall the transfer of such workers be permitted unless all measures relating to hygiene and accommodation which are necessary to adapt such workers to the conditions and to safeguard their health can be strictly applied.

3. When such transfer cannot be avoided, measures of gradual habituation to the new conditions of diet and of climate shall be adopted on competent medical advice.

4. In cases where such workers are required to perform regular work to which they are not accustomed, measures shall be taken to ensure their habituation to it, especially as regards progressive training, the hours of work and the provision of rest intervals, and any increase or amelioration of diet which may be necessary.

Article 17

Before permitting recourse to forced or compulsory labour for works of construction or maintenance which entail the workers remaining at the workplaces for considerable periods, the competent authority shall satisfy itself—

(1) that all necessary measures are taken to safeguard the health of the workers and to guarantee the necessary medical care, and, in particular, (a) that the workers are medically examined before commencing the work and at fixed intervals during the period of service, (b) that there is an adequate medical staff, provided with the dispensaries, infirmaries, hospitals and equipment necessary to meet all requirements, and (c) that the sanitary conditions of the workplaces, the supply of drinking water, food, fuel, and cooking utensils, and, where necessary, of housing and clothing, are satisfactory ;

(2) that definite arrangements are made to ensure the subsistence of the families of the workers, in particular by facilitating the remittance, by a safe method, of part of the wages to the family, at the request or with the consent of the workers ;

(3) that the journeys of the workers to and from the workplaces are made at the expense and under the responsibility of the administration, which shall facilitate such journeys by making the fullest use of all available means of transport ;

(4) that, in case of illness or accident causing incapacity to work of a certain duration, the worker is repatriated at the expense of the administration ;

(5) that any worker who may wish to remain as a voluntary worker at the end of his period of forced or compulsory labour is permitted to do so without, for a period of two years, losing his right to repatriation free of expense to himself.

Article 18

1. Forced or compulsory labour for the transport of persons or goods, such as the labour of porters or boatmen, shall be abolished within the shortest possible period. Meanwhile the competent authority shall promulgate regulations determining, *inter alia*, (a) that such labour shall only be employed for the

purpose of facilitating the movement of officials of the administration, when on duty, or for the transport of Government stores, or, in cases of very urgent necessity, the transport of persons other than officials, (b) that the workers so employed shall be medically certified to be physically fit, where medical examination is possible, and that where such medical examination is not practicable the person employing such workers shall be held responsible for ensuring that they are physically fit and not suffering from any infectious or contagious disease, (c) the maximum load which these workers may carry, (d) the maximum distance from their homes to which they may be taken, (e) the maximum number of days per month or other period for which they may be taken, including the days spent in returning to their homes, and (f) the persons entitled to demand this form of forced or compulsory labour and the extent to which they are entitled to demand it.

2. In fixing the maxima referred to under (c), (d) and (e) in the foregoing paragraph, the competent authority shall have regard to all relevant factors, including the physical development of the population from which the workers are recruited, the nature of the country through which they must travel and the climatic conditions.

3. The competent authority shall further provide that the normal daily journey of such workers shall not exceed a distance corresponding to an average working day of eight hours, it being understood that account shall be taken not only of the weight to be carried and the distance to be covered, but also of the nature of the road, the season and all other relevant factors, and that, where hours of journey in excess of the normal daily journey are exacted, they shall be remunerated at rates higher than the normal rates.

Article 19

1. The competent authority shall only authorise recourse to compulsory cultivation as a method of precaution against famine or a deficiency of food supplies and always under the condition that the food or produce shall remain the property of the individuals or the community producing it.

2. Nothing in this Article shall be construed as abrogating the obligation on members of a community, where production is organised on a communal basis by virtue of law or custom and where the produce or any profit accruing from the sale thereof remain the property of the community, to perform the work demanded by the community by virtue of law or custom.

Article 20

Collective punishment laws under which a community may be punished for crimes committed by any of its members shall not contain provisions for forced or compulsory labour by the community as one of the methods of punishment.

Article 21

Forced or compulsory labour shall not be used for work underground in mines.

Article 22

The annual reports that Members which ratify this Convention agree to make to the International Labour Office, pursuant to the provisions of Article 22 of the Constitution of the International Labour Organisation, on the measures they have taken to give effect to the provisions of this Convention, shall contain as full information as possible, in respect of each territory concerned, regarding the extent to which recourse has been had to forced or compulsory labour in that territory, the purposes for which it has been employed, the sickness and death rates, hours of work, methods of payment of wages and rates of wages, and any other relevant information.

Article 23

1. To give effect to the provisions of this Convention the competent authority shall issue complete and precise regulations governing the use of forced or compulsory labour.

2. These regulations shall contain, *inter alia*, rules permitting any person from whom forced or compulsory labour is exacted to forward all complaints relative to the conditions of labour to the authorities and ensuring that such complaints will be examined and taken into consideration.

Article 24

Adequate measures shall in all cases be taken to ensure that the regulations governing the employment of forced or compulsory labour are strictly applied, either by extending the duties of any existing labour inspectorate which has been established for the inspection of voluntary labour to cover the inspection of forced or compulsory labour or in some other appropriate manner. Measures shall also be taken to ensure that the regulations are brought to the knowledge of persons from whom such labour is exacted.

Article 25

The illegal exaction of forced or compulsory labour shall be punishable as a penal offence, and it shall be an obligation on any Member ratifying this Convention to ensure that the penalties imposed by law are really adequate and are strictly enforced.

Article 26

1. Each Member of the International Labour Organisation which ratifies this Convention undertakes to apply it to the territories placed under its sovereignty, jurisdiction, protection,

suzerainty, tutelage or authority, so far as it has the right to accept obligations affecting matters of internal jurisdiction; provided that, if such Member may desire to take advantage of the provisions of Article 35 of the Constitution of the International Labour Organisation, it shall append to its ratification a declaration stating—

- (1) the territories to which it intends to apply the provisions of this Convention without modification;
- (2) the territories to which it intends to apply the provisions of this Convention with modifications, together with details of the said modifications;
- (3) the territories in respect of which it reserves its decision.

2. The aforesaid declaration shall be deemed to be an integral part of the ratification and shall have the force of ratification. It shall be open to any Member, by a subsequent declaration, to cancel in whole or in part the reservations made, in pursuance of the provisions of subparagraphs (2) and (3) of this Article, in the original declaration.

Article 27

The formal ratifications of this Convention under the conditions set forth in the Constitution of the International Labour Organisation shall be communicated to the Director-General of the International Labour Office for registration.

Article 28

1. This Convention shall be binding only upon those Members whose ratifications have been registered with the International Labour Office.

2. It shall come into force twelve months after the date on which the ratifications of two Members of the International Labour Organisation have been registered with the Director-General.

3. Thereafter, this Convention shall come into force for any Member twelve months after the date on which the ratification has been registered.

Article 29

As soon as the ratifications of two Members of the International Labour Organisation have been registered with the International Labour Office, the Director-General of the International Labour Office shall so notify all the Members of the International Labour Organisation. He shall likewise notify them of the registration of ratifications which may be communicated subsequently by other Members of the Organisation.

Article 30

1. A Member which has ratified this Convention may denounce it after the expiration of ten years from the date on

which the Convention first comes into force, by an act communicated to the Director-General of the International Labour Office for registration. Such denunciation shall not take effect until one year after the date on which it is registered with the International Labour Office.

2. Each Member which has ratified this Convention and which does not, within the year following the expiration of the period of ten years mentioned in the preceding paragraph, exercise the right of denunciation provided for in this Article, will be bound for another period of five years and, thereafter, may denounce this Convention at the expiration of each period of five years under the terms provided for in this Article.

Article 31

At the expiration of each period of five years after the coming into force of this Convention, the Governing Body of the International Labour Office shall present to the General Conference a report on the working of this Convention and shall consider the desirability of placing on the agenda of the Conference the question of its revision in whole or in part.

Article 32

1. Should the Conference adopt a new Convention revising this Convention in whole or in part, the ratification by a Member of the new revising Convention shall *ipso jure* involve denunciation of this Convention without any requirement of delay, notwithstanding the provisions of Article 30 above, if and when the new revising Convention shall have come into force.

2. As from the date of the coming into force of the new revising Convention, the present Convention shall cease to be open to ratification by the Members.

3. Nevertheless, this Convention shall remain in force in its actual form and content for those Members which have ratified it but have not ratified the revising Convention.

Article 33

The French and English texts of this Convention shall both be authentic.

APPENDIX 13

RELEVANT EXCERPTS FROM THE REPORT OF THE COMMITTEE OF EXPERTS ON THE APPLICATION OF CONVENTIONS AND RECOMMENDATIONS: COM- PLAINTS AGAINST PORTUGAL CONCERNING ITS VIOLATION OF THE FORCED LABOR CONVENTION

ILO-GENEVA, 1963—47TH SESSION—REPORT III (PT. IV), PAGES 116-118

CONVENTION NO. 105: FORCED LABOR, 1957

Portugal (ratification: 1959). The Committee notes the information supplied in the Government's report for 1961-62 on the measures so far taken to implement the recommendations made by the Commission appointed under article 26 of the Constitution.

The Committee notes with interest that Legislative Decree No. 44309 of April 27, 1962 has, with effect from October 1, 1962, repealed the Native Labor Code, 1928, and all regulations, orders and other instruments issued thereunder, and brought into force a new Rural Labor Code, governing the employment of unskilled labor in all overseas provinces except Macao. The Committee notes that the new Code has eliminated provisions permitting the exaction of forced or compulsory labor, and provides in section 325 that any person who imposes compulsory labor on a worker in any manner whatsoever shall be liable to imprisonment for up to 2 years.

The Committee would be glad if the Government would supply further information in its next report on the following matters arising out of the report of the Commission appointed under article 26 of the Constitution:

1. Paragraphs 730 to 734 and 736 of the Commission's report. The Committee would be glad if the Government would indicate whether any regulations, decisions, instructions, circulars or other documents have been issued in the territories concerned to amplify, adapt or explain the provision of the Rural Labor Code of 1962, and if so, supply copies thereof.

2. Paragraph 735. The Government is requested to indicate whether Ministerial Legislative Instrument No. 24 of May 9, 1961 of Angola is still in force, and, if not, to indicate the provisions which repealed it. If this legislation is still in force, the Committee would be glad to receive full particulars of its practical application during the reporting period, including the number of persons called up for service in the Labor and Economic Recovery Corps, the areas and work in which they have been employed, the length of service and conditions of employment.

3. Paragraph 738. The Committee notes the information from the Governor of the District of Luanda concerning recruiting arrangements of the Diamond Company of Angola, appended to the Government's report. The Committee would be glad if the Government would in its next report—

(a) supply particulars of the number of workers recruited by the company according to area of recruitment;

(b) indicate whether, as stated in paragraph 524 of the Commission's report, workers recruited for the company are still obtained through "sobas";

(c) give information on the measures taken by the authorities to supervise the company's recruiting operations, particularly to ensure the strict application of sections 154 to 160 of the Rural Labor Code in this connection;

(d) supply particulars of the measures taken by the company, in accordance with the policy mentioned in paragraph 525 of the Commission's report, to make conditions of employment more attractive with a view to replacing recruited labor by labor offering its services spontaneously at the workplace, together with an indication of the results achieved toward this end.

4. Paragraph 741. Full particulars are requested of all measures taken, in accordance with the recommendation contained in this paragraph of the Commission's report, to ensure the strict enforcement of the instructions issued in Angola on August 31, 1961 concerning recruiting of labor for public services and undertakings, to improve conditions of employment in publicly owned railroads and ports so as to attract voluntary labor, to make the employment available known to potential workers and to provide proper transport and accommodation.

5. Paragraph 744. The Government is requested to supply full particulars of the measures taken, in accordance with the recommendation contained in this paragraph of the Commission's report, to ensure the elimination of all forced labor in road construction and maintenance. It is also asked to indicate the procedures followed in the territories concerned for the execution of such works, and to supply copies of regulations, administrative instructions or circulars governing these procedures.

6. Paragraph 749. The Committee notes the statement by the Cassequel Agricultural Company and the report by the Chief Labor Inspector of Angola on his inspection of the Company's plantations supplied by the Government with its report. The Committee would be glad if the Government would append to its next report copies of reports on any further labor inspection visits to the Company's plantations which may have been made during the reporting period.

7. Paragraph 750. The Committee would be glad if the Government would supply particulars of the conclusions and recommendations submitted by the committee set up on September 14, 1961 to consider the system of cotton cultivation in Angola and Mozambique (referred to in paragraph 249 of the Commission's report) and of any measures contemplated by the Government in this connection.

8. Paragraph 751. The Government is requested to indicate what consideration has been given to changes in taxation systems in order to avoid their operating as a possible form of indirect compulsion upon workers to undertake contract labor.

9. Paragraph 752. The Government is requested to indicate for each of the three territories concerned (a) the number of persons who have been sentenced or to whom security measures have been applied on the grounds of vagrancy; (b) the nature and duration of penalties or other measures imposed upon them and (c) the work to which they have been assigned.

The Committee would be glad if the Government would also indicate the measures taken to modify or supplement paragraphs 5 and 8 of decision No. 11 of the Governor-General of Mozambique of September 13, 1961 (set out in paragraph 221 of the Commission's report) in order to insure that vagrancy provisions will not, as under the repealed circulars of 1942 and 1947, be applied so as to compel persons to undertake specified forms of employment.

10. Paragraph 754. The Government is requested to supply information concerning the activities of the labor inspectorate in enforcing the Rural Labor Code, including the number of full-time inspectors in each province, the number of inspection visits, the number of violations of provisions governing recruiting and the conclusion of contracts, and particulars of proceedings in respect thereof.

It is also asked to supply information concerning the number of recruiting licenses issued, the areas and number of workers to which they related, the number of workers recruited, and the branches of activity for which they were recruited.

11. Paragraphs 762 and 763. The Committee would be glad to receive information on the practical application of the provisions of the Rural Labor Code concerning public placement services, mentioned in the Government's report, including the number and location of employment offices, the number of workers placed by them and the branches of activity in which these workers have been placed.

ILO-GENEVA, 1964—48TH SESSION—REPORT III (PT. IV), PAGES 152-154

CONVENTION NO. 105: ABOLITION OF FORCED LABOR, 1957

Portugal (ratification: 1959). The Committee notes the information supplied to the conference committee in 1963, and in the Government's report for 1962-63, in reply to the observations made in 1963, regarding matters arising out of the report of the commission appointed under article 26 of the ILO constitution.

Paragraphs 730 and 736 of the commission's report. The Committee notes the information concerning regulations, circulars, etc., issued pursuant to the Rural Labor Code of 1962, and requests that similar information be supplied in future reports.

Paragraph 735. The Committee notes the statement made by the Government's representative before the conference committee in June 1963, that the early repeal of Ministerial Legislative Instrument No. 24 of May 9, 1961, of Angola (which provided, as an emergency measure, for compulsory recruitment for a labor and economic recovery corps) was then contemplated. Having regard to the statement in the Government's report that in practice the workers concerned have been recruited without any compulsion, such repeal should present no difficulties, and the committee hopes that early measures will be taken to this end.

Paragraph 738. (a) The Committee notes the information supplied concerning the number of workers recruited by the Diamond Co. of Angola, and requests that similar information be supplied in future reports.¹

(b) The Committee notes the Government's statement that workers recruited by the Diamond Co. are not obtained through the traditional authorities (sobas). As there would thus appear to have been a change of practice since the commission's visit to the company in December 1961 (see paragraph 524 of the commission's report), the Government is requested to indicate (i) the regulations, decision, or other instrument by which this change was brought about (together with a copy thereof) and (ii) the nature of the new arrangements for recruiting the workers concerned.

(c) The Committee notes the Government's statement that inspection by the labor inspectorate in the district of Lunda (where the company's workings are situated) has not so far revealed any infringement of section 154 of the Rural Labor Code (which prohibits public officials from taking part in recruiting). The Committee would be glad if, in future reports, the Government would (i) give information concerning the application not only of section 154 of the code, but also of sections 157 and 158 (requiring public officials, local headmen, and village chieftains to abstain from any act appearing to give assistance in recruiting), (ii) supply such information not only in respect of the district of Lunda, but also in respect of areas outside this district in which the company recruits, and (iii) provide particulars of the activities of the labor inspectorate of the Labor, Welfare, and Social Action Institute in this connection.

(d) The Committee notes the information supplied concerning the medical, welfare, and recreational facilities provided by the Diamond Co. It would be glad if the Government would, in future reports, in addition to such particulars, indicate (i) any improvements in conditions of employment (wages and allowances, hours of work, rest days, holidays with pay, etc.) which have been made in pursuance of the company's declared policy to make conditions more attractive with a view to replacing recruited by spontaneous labor, and (ii) the results so far achieved toward realization of this objective.

Paragraph 741. The Committee notes the Government's statement that, in recruiting for public undertakings and services in Angola, the provisions of the Rural Labor Code are strictly applied. The Committee would be glad if the Government would (i) indicate in the next report, as already requested by it in 1963, what measures have been taken to implement the commission's recommendation that conditions of employment in publicly owned railways and ports should be improved so as to enable them to attract voluntary labor, and (ii) supply information on the recruiting arrangements now in force in these undertakings.

Paragraph 744. The Committee notes that road construction and maintenance in Angola have now been entrusted to an independent board of roads, and that rules for this board are being drawn up. It would be glad if the Government would (i) supply a copy of the rules, when adopted, (ii) supply information on the conditions of employment of the board's unskilled manual workers (together with copies of any standard forms of contracts of employment), and (iii) indicate to what extent such workers are obtained by recruiting.

Paragraph 749. The Committee notes the conclusions of the inspection visit to the Cassequel Agricultural Co., in June 1963, reproduced in the Government's report. It would be glad if the Government would, in the next report, indicate

¹ The Government is asked to supply a detailed report for the period 1963-64.

(i) the arrangements now in force for engaging the company's labor and (ii) the number and proportion of recruited workers employed by the company.

Paragraph 750. Although the Government's report contains no new information concerning the system of cotton cultivation in Angola and Mozambique, the Committee notes that, after the end of the reporting period, Legislative Decree No. 45179 of August 5, 1963, was issued, and that it provides for the expiration of all existing concessions not later than August 31, 1966, makes the Provincial cotton institutes responsible for the promotion, coordination and supervision of cotton growing and related activities, including technical and financial assistance to cottongrowers (thus transferring to them functions previously discharged by concession-holders), abolishes exclusive rights of purchase of cotton, and replaces the system of fixed prices to producers by one of minimum prices.

The Committee also notes with interest that, by order No. 12982 of November 16, 1963, the concession of the Cotton Co., of Angola (Cotonang) was terminated with effect from December 19, 1963.

The Committee notes that section 3 of Legislative Decree No. 45179, provides for the making of regulations, *inter alia*, for the purpose of guaranteeing freedom of production, and requests the Government to supply copies of all such regulations which have been issued.

The Committee further notes that, under section 12 of the decree, ginning and pressing of cotton is to be permitted only in existing factories, and no new factories will be permitted to be established unless the existing ones are unable to process all the cotton produced in the area which they serve. These provisions would appear to limit very considerably the effect of the abolition of the exclusive right of concession-holders to buy cotton provided for elsewhere in the decree, particularly in the light of the provision in section 5 that only those with the technical facilities to process cotton may buy raw cotton. Recalling the earlier practices in the matter noted by the commission in its report and its recommendations concerning arrangements to insure that the system of marketing and processing of cotton does not, in practice, involve a danger of constraint to the detriment of producers, the Committee would be glad if the Government would review the above-mentioned provisions with a view to insuring producers a greater degree of freedom in marketing their crops.

Paragraph 752. The Committee notes the information supplied concerning the practical application of vagrancy provisions, and requests that similar information be supplied in future reports.

Paragraph 754. The Committee notes the information supplied on the operation of inspection services and on the volume and nature of recruiting, and requests that similar information be supplied in future reports. It would, in particular appreciate more detailed information on the activities of the Inspectorate to insure the elimination of all forms of compulsory labor, and on all cases of violations of the statutory provisions on this matter.

As, according to the information supplied, the inspection services in Angola and Mozambique are still at an initial stage, and that of Guinea remains to be established, the Committee would be glad if the Government would indicate the further measures proposed to be taken to develop the inspection services in accordance with the recommendations of the commission.

Paragraphs 762 and 763. As, according to the information supplied, the free public placement services provided for in the Rural Labor Code have not yet been established in Angola and Guinea, and in Mozambique only a very limited beginning has been made in the capital, the Committee would be glad if the Government would also indicate the measures proposed to be taken to develop these services, in accordance with the Commission's recommendations.²

ILO-GENEVA, 1965—49TH SESSION—REPORT III (Pt. IV), PAGES 121-123

CONVENTION NO. 105 : ABOLITION OF FORCED LABOR, 1957

Portugal (ratification: 1959). The Committee notes the information supplied in the Government's report for 1963-64 regarding matters arising out of the report of the Commission appointed under article 26 of the ILO constitution.

Paragraphs 730 and 736 of the Commission's report. The Committee has noted with interest the collection of orders, circulars, etc. issued by the Labor, Social

² The Government is asked to supply full particulars to the conference at its 48th sess., and to report in detail for the period ending June 30, 1964.

Security, and Social Welfare Institute of Angola pursuant to the Rural Labor Code, which was appended to the Government's report. It would appreciate information concerning similar documents which may have been issued in Mozambique and Portuguese Guinea.

Paragraph 735. The Committee notes the Government's statement that Ministerial Legislative Instrument No. 24 of May 9, 1961, of Angola (which provided, as an emergency measure, for compulsory recruitment for a labor and economic recovery corps) was revoked on the coming into force of the Rural Labor Code on October 1, 1962.

The Committee observes, however, that Decree No. 44309 of April 27, 1962, by which the Rural Labor Code was approved, did not expressly repeal the above-mentioned legislative instrument; moreover, in its report for the period ending June 30, 1963, the Government itself stated that the legislative instrument was still in force. In these circumstances, and to avoid all uncertainty in the matter, the Committee would be glad if provisions specifically repealing the legislative instrument question could be adopted.

Paragraph 738. The Committee notes with interest the decision issued by the Governor-General of Angola on June 13, 1963, and published in the official bulletin on May 23, 1964, whereby, in order to insure strict compliance with the Rural Labor Code, recruitment was to be freely permitted in the district of Lunda for employment outside this district, thus putting an end to the earlier arrangements (mentioned in paragraph 520 of the Commission's report) limiting recruiting in this district to undertakings operating there (in fact, the Diamond Co.).

The Committee also notes the information supplied regarding the composition of the labor force of the Diamond Co. and recent improvements in wage rates. It would appreciate further information in subsequent reports on the measures taken, and results achieved, in pursuance of the company's declared policy of trying to replace recruiting by the exclusive engagement of labor spontaneously offering its services.

The Committee notes that the Government has not supplied certain of the information concerning the Diamond Co. requested in 1964, namely—

- (a) indications of the company's present recruiting arrangements; and
- (b) particulars of the activities of the labor inspectorate in supervising the observance of the provisions of the Rural Labor Code in the company's recruiting operations.

This information seems all the more relevant as at the time of the visit to the company by the Commission appointed under article 26 (as noted in paragraph 524 of the Commission's report) the company's representatives themselves stated that its recruiting agents were obtaining workers from the traditional chiefs ("sobas")—a practice even then contrary to the existing legislation (see par. 474 of the Commission's report)—and as the Government has stated in its latest report that no special measures have been taken to insure that this practice has been discontinued.

Paragraph 741. The Committee notes with interest that instructions have been given to reduce recruitment of workers by public services (particularly the publicly owned ports and railways) by employing spontaneously offered labor. It would be glad if the text of these instructions could be supplied.

The Committee regrets, however, that the Government has not supplied information, requested by the Committee in 1963 and once more in 1964, concerning the measures taken to implement the recommendation of the Commission appointed under article 26 that conditions of employment in publicly owned railways and ports should be improved so as to enable them to attract voluntary labor. Such measures appear all the more important in view of the difficulties which, according to the Government's report, the publicly owned railways are encountering in attracting labor. The Committee trusts that full information on this question will be supplied in the next report.

The Committee also hopes that, as already requested in 1964, the Government will supply information on the recruiting arrangements now in force in the publicly owned railways and ports.

Paragraph 744. The Committee notes that the rules of operation of the Independent Board of Roads of Angola have still to be issued. It would be glad if the Government would supply a copy of these rules, when adopted, and would also, as already requested in 1964, supply information on the conditions of employment of the board's unskilled manual workers.

Paragraph 749. The Committee notes the information supplied concerning the Cassequel Agricultural Co. It would be glad if the Government would, as already requested in 1964, supply information on the arrangements now in force for engaging the company's labor (in particular, as regards recruiting procedures).

The Committee observes, from the figures supplied with the Government's report, that, while there has been some fluctuation in the annual volume of recruitment by the Cassequel Agricultural Co., the number of workers recruited in 1963 was greater than in various earlier years (e.g., 1958 and 1960); it also observes that, during the period of 6 years (1958-64) for which the Government has supplied figures, no improvement had been made in the cash wage paid to recruited workers. In the light of these facts the Committee would be interested to know whether consideration has been given by this company to the adoption of the policy followed by certain other employers of progressively eliminating recruiting through exclusive reliance on spontaneously offered labor. Such a policy would appear to commend itself particularly in the present case, since the populations in the areas neighboring the company's plantations are considerable and the workers recruited by it at present in fact come from quite short distances.

Paragraph 750. The Committee has noted with interest the further explanations provided by the Government concerning the new system of cotton cultivation and marketing under Legislative Decree No. 45179 of August 5, 1963, and the Order issued in Mozambique pursuant to this Decree, on May 9, 1964. It would appreciate similar information on the more detailed provisions issued on this subject in Angola.

Paragraph 754. The Committee notes with interest the information supplied by the Government on the work of inspection services. It notes in particular the rapid growth in the inspectorate in Angola: the number of labor inspectors and supervisors has risen in the past 12 months from nine to 22, and the authorized establishment provides for the appointment of 23 more. The Committee notes that, in contrast with these developments, the labor inspectorate in Mozambique is limited to six inspectors. It would appreciate further information on measures to strengthen these services.

The Committee has also noted the figures supplied in the last two reports on the volume of recruiting in Angola and Mozambique. From these it appears that almost 100,000 workers are still recruited annually in Angola and that in the period July 1962-June 1963 almost 120,000 workers were recruited in Mozambique (apart from workers engaged for work in South Africa). The Committee would appreciate information on any consideration which may have been given by the Government to promoting the adoption generally of the policy, previously followed by certain employers, aimed at the progressive elimination of recourse to recruitment by developing to the maximum extent possible the utilization of spontaneously offered labor.

Paragraphs 762 and 763. In connection with the preceding comments, the development of public employment services would (as stressed by the Commission appointed under article 26) be of particular significance. The Committee notes that in Angola the employment service provided for in the Rural Labor Code has not yet been established, that in Portuguese Guinea it is only at an initial stage, and that in Mozambique placement has so far been limited to a very small number of workers. The Committee would accordingly appreciate information on the further measures taken to implement the relevant provisions of the Rural Labor Code section 145 of which provides that a free public placement service shall be available for all workers.

Article 1 (a) of the Convention. The Committee notes with interest that, following a direct request made by it in 1963, sections 26, 261 to 264 and 266 of Legislative Decree No. 26643 of 1936 concerning prison organization have been amended so as to exempt from the obligation to perform prison labor persons in preventive detention and prisoners convicted of political offenses. Certain further points in this connection are being taken up in a direct request which the Committee is addressing to the Government.

ILO-GENEVA, 1966—50TH SESSION—REPORT III (PT. IV), PAGES 118-119

CONVENTION NO. 105: ABOLITION OF FORCED LABOR, 1957

Portugal (ratification: 1959). The Committee has taken note of the very detailed information supplied by the Government in answer to its observations

on matters arising out of the report of the commission of inquiry appointed under article 26 of the ILO constitution, and of the statement communicated by the Government, in response to a request by the governing body of the ILO concerning the measures taken to implement the recommendations of the commission of inquiry.

The Committee notes with satisfaction that Ministerial Legislative Instrument No. 24 of May 9, 1961, of Angola, which provided for compulsory recruitment for a Labor and Economic Recovery Corps as an emergency measure (as noted by the Commission of inquiry in para. 735 of its report), was repealed by Decree No. 46251 of March 19, 1965.

The Committee also notes with interest the Government's statement, with reference to paragraph 746 of the report of the Commission of Inquiry, that, under new agreements concluded with the Republic of South Africa and ratified on October 13, 1965, the penal sanctions for breach of contracts of employment provided for in the laws of the Republic of South Africa will no longer be applied to workers from Portuguese territory. The Committee requests the Government (a) to supply copies of the new provisions with its next report; (b) to indicate whether they have also been ratified by the Republic of South Africa and, if so, the date on which they came into force; (c) to indicate the measures of publicity taken to bring the new provisions to the attention of all interested parties (employers, workers, Portuguese officials responsible for looking after the interests of workers from Portuguese territory employed in South Africa, and the competent judicial authorities).

With reference to paragraph 744 of the report of the commission of inquiry, the Committee notes that the rules of operation of the Angola roads board have now been adopted and are in force, and that the full text thereof will be supplied when printed.

The Committee refers to the conclusions reached by it in the special report which it is submitting to the Governing Body, as requested by the latter, on the measures taken by the Government of Portugal to implement the recommendations of the Commission appointed under article 26 of the Constitution, and requests the Government to continue to give in subsequent reports:

(a) detailed information on the measures taken by the Diamond Co. of Angola in pursuance of its declared policy of trying to replace recruiting by the exclusive engagement of labor spontaneously offering its services, the effect of these measures on the composition of the company's labor force, the methods of recruiting used by the company and the results of inspections carried out by the labor inspectorate in this connection (par. 738 of the report of the commission of inquiry);

(b) similar information with regard to the publicly owned railways and ports of Angola (par. 741);

(c) similar information with regard to the Cassequel Agricultural Co., indicating also the reasons for recourse by this company to professional recruiters from 1963 onward and whether it continues to use this form of recruiting, and providing detailed information concerning the rates of remuneration currently in force (par. 749);

(d) particulars of the size and activities of the labor inspection services of Angola and Mozambique, including information on any matters bearing directly on the application of the Convention which may have come to light as a result of these activities;

(e) detailed information on further action in the field of manpower policy in Angola and Mozambique, particularly as regards the development of the employment services provided for in the Rural Labor Code and Legislative Decree No. 46731 of 1965 and the effect of these measures on the volume of recruiting for the various branches of activity.⁸

ILO—GENEVA, 1967—51ST SESSION—REPORT III (PT. IV), PAGES 111-115

CONVENTION NO. 105: ABOLITION OF FORCED LABOR, 1957

Portugal (ratification: 1959). In 1966, at the request of the Governing Body of the International Labor Office, the Committee presented a special report on the measures which had been taken by the Government of Portugal to implement the recommendations made in 1962 by the commission of inquiry appointed under article 26 of the ILO Constitution. The Conference Committee, on the basis of

⁸ The Government is asked to report in detail for the period ending June 30, 1966.

its discussion of this special report, last year made the following recommendations to the Government of Portugal: first, that an efficient public employment service be developed, which would take over all work of placing in Angola and Mozambique now done through recruiting agents, whether professional recruiters or employees of the companies concerned; second, that substantial improvements be made in wages and conditions of work, as a positive inducement to workers to seek employment spontaneously; third, that labor administration services be rapidly expanded to ensure that manpower policies, and particularly the laws for the protection of workers, were properly observed everywhere. The committee also requested the Government to send a full and detailed report on the implementation of these measures.

In response to the above-mentioned request, the Government has supplied, in addition to the report on the application of the convention due under article 22 of the Constitution, special reports regarding employment services, wages and labor inspection in Angola and Mozambique.

Angola. 1. Employment services. The Committee has noted with interest the very detailed information on the manpower situation and labor migration supplied in the special report on Angola, which analyses not only the factual situation, but also the policy issues facing the authorities. The report points out that the contract labor system and recruiting of labor (particularly through professional recruiters) constitute obstacles to the improvement of conditions of work and to the better utilization of manpower. It indicates that these problems are likely to be solved only through the progressive elimination of recruiting, accompanied by improved conditions of employment to attract a sufficient supply of labor offering its services spontaneously and to encourage the stabilization of labor at places of employment. The report recognizes the importance, for the purpose of facilitating such trends, of developing the free public employment service provided for in the Rural Labor Code, together with transit camps at important transport centers which would be available not only to workers in transit, but also to work-seekers. This conclusion has also been emphasized by the Fourth National Symposium on Labor Matters (held in Luanda in August 1966), which called for urgent expansion of the national employment service as a means of facilitating the mobility of all citizens with full respect for freedom of labor and the free choice of employment.

The Committee notes that the above-mentioned conclusions are very similar to one of the main conclusions reached in its special report of 1966, in which it pointed to the great scope and need for further action in the field of manpower policy, including the development of public employment services, and stated that the vigorous pursuit of a policy aimed at making the public employment service, rather than recruiting, the means of matching labor demand and supply would constitute the best guarantee that employment relations would repose unequivocally on the free will of the parties concerned.

The statistics on the present employment situation in Angola supplied in the Government's special report bring out the need for further action to implement the policies to which the Government has referred. While the total number of "rural" workers (that is, unskilled wage earners almost exclusively of African origin) has fallen in recent years (for example, from 263,000 to around 241,000 in the period 1962-64), the proportion of contract workers has been going up (their number increasing by 5,000 between 1962 and 1964—from around 98,000 to nearly 103,000). The Committee notes the particularly heavy reliance on contract labor in certain parts of Northern Angola: according to figures supplied by the Government (tables III and VI in the first of two papers on employment), in 1964 roughly 85 percent of the unskilled labor in the Districts of Uigue and North Cuanza consisted of contract labor. Furthermore, while the Government has repeatedly emphasized the objections to professional recruiting, as compared with recruiting directly by employers, there appears to have been a marked increase between 1963 and 1965 in the number of licences for professional recruiting, while at the same time recruiting by employers has decreased. There also appears to exist a tendency toward the lengthening of the period of written contracts: whereas in 1963 contracts for more than 12 months were practically unknown (representing less than 2 percent of the total number of written contracts), in 1964 roughly a fifth of such contracts exceeded this period (being mostly for 15 months). All these trends appear to be in the opposite direction from that in which the previously mentioned official policies purport to be aimed.

The Government has indicated that the employment office which started func-

tioning in Luanda in 1965, on an experimental basis, has increased its activity, that a further office has been established in the Lobito-Benguela area, and that arrangements for the opening of other employment offices, particularly in the interior of Angola, are under consideration. In view of the magnitude of the outstanding problems, the Committee hopes that these activities can be intensified, and that detailed information on the further measures taken, and on their effect in implementing the manpower policies mentioned in the Government's special report, will be supplied in subsequent reports.

2. Wages. The Committee has noted the indications contained in the Government's special report concerning productivity of labor and the relation of wage systems to productivity. It also notes the brief indications as to the average wages of rural workers (which appear to refer to the total value of remuneration, including an estimate of the value of benefits in kind) from 1958 to 1965. It would appreciate further information on this question in future reports, including more detailed figures showing the evolution of cash wages and information on general measures taken with a view to improvement of conditions of employment.

3. Labor Inspection. The Committee has noted the detailed information on the activities of the labor inspectorate of Angola contained in its annual report for 1965. Since Portugal has ratified the Labor Inspection Convention, 1947 (No. 81), the Committee proposes henceforth to follow general developments in this field in its examination of the reports on that Convention. It would, however, appreciate more detailed information on the activities of the inspectorate in regard to the enforcement of the provisions of the Rural Labor Code relevant to the application of the Abolition of Forced Labor Convention.

4. Other specific points arising out of the recommendations of the commission of inquiry. The Committee notes from the Government's report that there have been no significant changes as regards the employment of workers by various undertakings specifically mentioned in its previous observations. The Committee accordingly once more requests the Government to supply in future reports:

(a) detailed information on the measures taken by the Diamond Co. of Angola in pursuance of its declared policy of trying to replace recruiting by the exclusive engagement of labor spontaneously offering its services, the effect of these measures on the composition of the company's labor force, the methods of recruiting used by the company and the results of inspections carried out by the labor inspectorate in this connection (para. 738 of the report of the commission of inquiry appointed under article 26 of the ILO Constitution);

(b) similar information with regard to the publicly owned railways and ports of Angola (para. 741);

(c) similar information with regard to the Cassequel Agricultural Co., indicating also the reasons for recourse by this company to professional recruiters from 1963 onwards and whether it continues to use this form of recruiting, and providing detailed information concerning the rates of remuneration currently in force (para. 749).

Mozambique. 1. Employment services. The Committee has noted the information given in the Government's special report concerning the extent of recruiting in Mozambique and the factors which, in the view of the authorities in Mozambique, make inappropriate the development of an extensive public employment service for workers from rural areas. (The Government has stated that, of the 435,000 workers of rural origin in employment in Mozambique, only 44,000 were engaged through professional recruiters, and that only a small minority of the latter are working under a written contract, the majority being employed under engagements of indefinite duration. The Government has also stated that, in present conditions, the representatives or agents of employers do not need to undertake active recruiting operations, but function rather like agents of an employment service to whom rural workers present themselves when they wish to take wage-earning employment. In this context the authorities consider that the establishment of a public employment service for workers from rural areas would be unnecessarily costly, superfluous and even self-defeating. They mention the difficulty of providing an adequate network of employment offices for vast, sparsely populated regions, the impossibility of using the existing general administrative services for this work, the lack of flexibility of a public service compared with the operation of the present recruiting system, and the suspicion with which the rural populations would regard a public service, fearing that it aimed at official control of their freedom of movement. The Government's report indicates that,

in the urban areas, placing activities are undertaken by the trade unions, and that the experimental employment office for rural and assimilated workers set up in Lourenço Marques in 1965 placed 25 workers.

As regards the existing employment situation in Mozambique, the Committee recalls that the last detailed figures supplied by the Government concerning recruiting for employment within Mozambique related to the period July 1962 to June 1963. In that period some 117,000 workers were shown to have been recruited, the great majority under licenses granted to professional recruiters (as distinct from direct recruiting by employers). The Committee would appreciate it if similarly detailed figures could be supplied with the next report, together with an indication of the factors that have led to the substantial reduction in the number of recruited workers which, taking as a basis the figure mentioned in the last report, would seem to have occurred since 1963.

As regards the establishment of a public employment service, the Committee recalls that, according to section 145 of the Rural Labor Code, which came into force on October 1, 1962, "a free public employment service shall be available for all workers." The Committee indicated in some detail in its special report of 1966 why it considered the progressive replacement of existing recruiting arrangements by such a public service to constitute an important further step in guaranteeing the effective respect for freedom of labor (and it has noted above that these preoccupations appear to be shared by the authorities of Angola). Accordingly, while recognizing that a number of practical difficulties may have to be overcome in implementing the statutory directive laid down in the Rural Labor Code and that continuing effort over a considerable number of years may be necessary to establish a fully adequate public employment service available to all workers, the Committee hopes that the competent authorities will give further consideration to this matter in the light of the above-mentioned considerations, and that the Government will be in a position to indicate in the next report the measures taken and contemplated to give practical effect to the relevant provisions of the Rural Labor Code.

2. Wages. The Committee has noted the figures in the Government's special report showing the wages of unskilled workers in agriculture and industry in 1950, 1955, 1957, 1960 and 1966 in the various Districts of Mozambique. Since the figures prior to 1966 relate to cash wages, while those for 1966 refer to total remuneration (including the value of benefits in kind), it is difficult to draw any definite conclusions concerning the most recent period. The Committee would accordingly appreciate further information in future reports of the evolution of the cash wages of the workers in question, and also on any general measures taken with a view to improving conditions of employment.

3. Labor inspection. The Committee notes the information concerning the activities of the labor inspection services of Mozambique from January 1963 to June 1966. It observes that the staff of the inspectorate now consists of the chief inspector, five labor inspectors and 11 supervisors, and that the reorganization of the inspectorate, involving the creation of three additional posts for labor inspectors and 36 additional posts of supervisors, is under consideration. As indicated in regard to Angola, the Committee proposes henceforth to follow general developments in this field in its examination of the reports on the Labor Inspection Convention. It would however appreciate more detailed information on the activities of the inspectorate in regard to the enforcement of the provisions of the Rural Labor Code relevant to the application of the Abolition of Forced Labor Convention.

4. Other matters arising out of the report of the commission of inquiry. In its previous report, the Government—referring to paragraph 746 of the report of the commission of inquiry appointed under article 26 of the ILO Constitution—had stated that under new agreements concerning the employment of workers from Mozambique concluded with the Republic of South Africa and ratified on October 13, 1965, the penal sanctions for breach of contracts of employment provided for in the laws of the Republic of South Africa would no longer be applied to workers from Portuguese territory. The Committee accordingly requests the government to indicate:

(a) whether the arrangements with the Republic of South Africa to which it has referred have been ratified by the Republic of South Africa and come into force;

(b) the measures taken to insure that the exemption from liability to penal sanctions of workers from Portuguese territory is known to all inter-

ested parties (employers, workers, and the competent judicial authorities) as well as to Portuguese officials responsible for looking after the interests of workers from Portuguese territory employed in South Africa.

ILO-GENEVA, 1969—53D SESSION—REPORT III (PT. IV), PAGES 120-121

CONVENTION NO. 105: ABOLITION OF FORCED LABOR, 1957

Portugal (ratification: 1959). The Committee regrets to note that no report has been supplied on this convention for the period ending June 30, 1968. While noting that, in his statement to the conference committee in 1968, a Government representative provided some information on the questions raised in its previous observations (particularly as regards developments in the practices followed for engagement of labor), the Committee can only refer once again to the various matters arising out of the recommendations made in 1962 by the commission of inquiry appointed under article 26 of the ILO Constitution and the subsequent discussions in the Conference Committee in respect of which it considers further information still to be necessary.

Angola. 1. Measures aimed at the progressive elimination of recruiting.—The Committee in previous observations has noted with interest various policy statements concerning the progressive elimination of recruiting of labor through the development of free public employment services, as provided for in the Rural Labor Code, and other measures aimed at attracting a sufficient supply of labor offering its services spontaneously. It has noted that measures had been initiated for the creation of employment services and the establishment of appropriate transit centers for workers traveling between their homes and places of employment. In view of the magnitude of the outstanding problems, the Committee has stressed the need for further intensification of such action. The Committee once more expresses the hope that the Government will in subsequent reports supply detailed information on the further measures taken and on their effect in implementing the manpower policies mentioned by the Government.

The Government itself has indicated that measures to improve conditions in employment, and thus to attract a sufficient volume of manpower offering its services spontaneously, are an important aspect of the policy aimed at the progressive elimination of recruiting. This point has also been repeatedly emphasized in the discussions of this case by the conference committee. The Committee accordingly once more expresses the hope that the Government will in subsequent reports supply detailed figures showing the evolution of cash wages, as well as information on other measures taken with a view to improvement of conditions of employment.

2. Action by particular employers referred to in the report of the commission of inquiry (paras. 738, 741, and 749). The Committee once more expresses the hope that the Government's subsequent reports will contain—

(a) detailed information on the measures taken by the Diamond Co. of Angola in pursuance of its declared policy of trying to replace recruiting by the exclusive engagement of labor spontaneously offering its services, the effect of these measures on the composition of the company's labor force, the methods of recruiting used by the company and the results of inspections carried out by the labor inspectorate in this connection;

(b) similar information with regard to the publicly owned railways and ports of Angola;

(c) similar information with regard to the Cassequel Agricultural Co.

3. Labor inspection.—The Committee once more expresses the hope that information will be supplied in future reports concerning the activities of the labor inspectorate in regard to the enforcement of the provisions of the Rural Labor Code of 1962 relevant to the application of the Abolition of Forced Labor Convention.

Mozambique.—1. Measures concerning conditions of employment of labor.—The Committee has in its previous observations noted the virtual absence of public placement activities in Mozambique, as well as statements by the authorities questioning the utility of creating a public employment service, on the ground

that such a service might be unnecessarily costly, superfluous and even self-defeating. The Committee recalls once more that according to section 145 of the Rural Labor Code, which came into force on October 1, 1962, "a free public employment service shall be available for all workers." It has repeatedly emphasized the importance of the implementation of this statutory requirement as one of the measures necessary to bring about the progressive elimination of recruiting and a further step in guaranteeing effective respect for freedom of labor. The Committee accordingly once more expresses the hope that the competent authorities will give further consideration to the implementation of the above-mentioned provisions of the Rural Labor Code, and that detailed information on this matter will be provided in subsequent reports.

With reference to more general measures to improve conditions of employment as a means of increasing the volume of manpower offering its services spontaneously, the Committee recalls that, on the basis of the data previously supplied, it was not in a position to draw any definite conclusions concerning the evolution of wages. It accordingly once more expresses the hope that information will be given in future reports on the evolution of cash wages of unskilled workers in agriculture and industry and on any other measures taken with a view to improving conditions of employment.

2. Labor inspection.—The Committee expresses the hope that future reports will contain information corresponding to that requested for Angola.

The Committee trusts that the Government will make every effort in future to supply the reports due on this convention and to provide full information on the various matters mentioned above.

ILO—GENEVA, 1970—54TH SESSION—REPORT III (PT. IV), PAGE 151

CONVENTION NO. 105: ABOLITION OF FORCED LABOR, 1957

Portugal (ratification: 1959). The Committee regrets that no report has been supplied on this convention. It has however duly noted the information supplied to the conference committee by a Government representative in 1969. The Committee has moreover been informed of the request by the Government that the matters arising out of its earlier observations concerning the application of the convention be the subject of direct contacts between the Government and the organization, and understands that the practical arrangements necessary for this purpose are presently being made.

The Committee considers it appropriate, in this connection, to recall that it had previously concluded that the legislative action called for by the recommendations made in 1962 by the commission of inquiry established under article 26 of the constitution of the ILO had been taken, but that there remained certain matters of practical application of the policy of abolition of forced labor in Angola and Mozambique in respect of which further action appeared to be indicated. The three aspects to which the Committee has drawn particular attention are: the development of adequate manpower services designed to insure the progressive elimination of recruiting of labor and its replacement by a system of spontaneous offer of their services by workers, with the assistance of the free public employment services provided for in the Rural Labor Code of 1962; the improvement of conditions of employment with a view to attracting a sufficient volume of manpower offering its services spontaneously; and the sufficient development of labor inspection activities to insure the strict observance of statutory safeguards against compulsion to labor. The Committee has also sought further information concerning the manpower situation and the policy and methods in regard to the engagement of labor of certain undertakings in Angola which had been referred to in the report of the commission of inquiry; namely, the Diamond Co. of Angola, the publicly owned railways and ports in Angola, and the Cassequel Agricultural Co.

The Committee hopes that the proposed direct contacts will make it possible to obtain substantial clarification concerning these outstanding matters, and that it will be in a position at its next session to examine the further elements which will have become available as a result.

CONVENTION NO. 105; ABOLITION OF FORCED LABOR, 1957

Portugal (ratification: 1959). In 1970 the Committee noted that the Government of Portugal had requested that the matters arising out of the Committee's earlier observations concerning the application of the Abolition of Forced Labor Convention, 1957, be the subject of direct contacts between the Government and the Organization. The Committee recalled its previous conclusions that the legislative action called for by the recommendations made in 1962 by the commission of inquiry appointed under article 26 of the ILO Constitution had been taken, but that there remained certain matters of practical application of the policy of abolition of forced labor in Angola and Mozambique in respect of which further action appeared to be indicated. The Committee had been concerned to satisfy itself, in particular, that recruiting of workers would not involve any form of coercion, that wages and other conditions of work would be adequate to attract a sufficient supply of labor offering its services spontaneously, and that labor inspection activities would be sufficiently developed to insure the strict observance of statutory safeguards against compulsion to labor.

At its present session the Committee had before it the report of Mr. Pierre Juvigny, Councillor of State (France), member and former chairman of the United Nations Subcommittee on the Prevention of Discrimination and Protection of Minorities, whom the Director-General of the International Labor Office had appointed as special representative for the purpose of the direct contacts.

The Committee notes that, after initial discussions with representatives of the Government in May 1970, the special representative visited Anglo and Mozambique from October 9 to 21, 1970, to obtain firsthand information on the matters arising out of the Committee's previous observations. In the course of these visits, he had discussions with representatives of the Government, particularly the official of the Labor, Social Security and Social Welfare Institutes of Angola and Mozambique, visited a number of public and private undertakings for the discussions with managements and interviews with workers, in Angola investigated the conditions under which workers are recruited by professional recruiters in the area from which the bulk of recruited labor is drawn, and also had interviews with the representatives of certain workers' organizations. The findings of fact which emerge from the report of the special representative are summarized below.

Angola. It appears from figures supplied by the Labor, Social Security and Social Welfare Institute of Angola that at the end of 1968 the employed labor force consisted of some 560,000 workers, of whom 247,000 were considered to be skilled or semiskilled and subject to the Angola Labor Code of 1957, while 313,000 were classified as unskilled workers subject to the Rural Labor Code of 1962. Of the latter, 123,000 were workers who had been recruited and were employed under written contracts of employment, and 190,000 were workers who had offered their services spontaneously and were working under oral contracts of indefinite duration. During the years 1967 to 1969 the volume of recruiting remained more or less the same—some 122,000 workers each year. Of these workers, the greater part (88 percent) was employed in agriculture, the main movement being from the densely populated central highlands to the northern plantations. From his inquiries, which included interviews with professional recruiters, agents of such recruiters, workers in their villages, workers at transit centers at the time of being recruited, workers at places of employment, and officials engaged in supervising recruiting operations, the special representative reached a series of conclusions which may be summarized as follows:

What is involved is a constant, traditional current of migration;

The workers fall into two main categories: those who regularly accept new contracts and are in fact permanent workers for long periods, and those who take employment from time to time, for a specified period, with the specific aim of obtaining money and investing it, on their return, in improving their means of production;

Recruited workers are fully aware, before being recruited, of all the financial conditions of their contract as well as of the material conditions at the place of work:

In fact, recruiting corresponds to a system of employment under which persons spontaneously offer their services to agents acting as intermediaries between the worker and the undertaking; whatever may have been the situation in the past, it does not appear that these intermediaries actively seek out workers or prospect for labor with the aid of any direct or indirect means of pressure;

The recruiters in reality play the role of private placing agencies, where workers belonging to one of the two categories previously mentioned go spontaneously when they wish to work in certain undertakings, particularly the plantations;

The recruiters may operate only under a license issued by the public authorities and subject to a system of supervision which appears to be applied with increasing strictness;

It is to be concluded from a large number of concordant statements that, in this matter, there is no kind of coercion by the traditional chiefs or by public officials.

The special representative further indicates that, although recruiting under the above-mentioned conditions appears to be free from any kind of coercion, the Government aims at the gradual elimination of recruiting by professional recruiters, and that to this end a network of public employment offices and transit camps for workers seeking employment is being established in Angola. The professional recruiters have been informed of this policy, and it has been suggested to them that they change their activities to those of public transport undertakings, using for this purpose the vehicles at present employed for the conveyance of recruited workers.

In considering wages policy as a factor in stimulating the spontaneous offer of labor, the special representative indicates that a number of statutory provisions have been adopted since 1967 whose effect may be summed up as follows:

Binding minimum wage rates have been established for workers generally;

These wage rates have been increased;

There has been an increase in the proportion of the wage to be paid in cash as compared with benefits in kind;

The payment of a nonreimbursable precontract bonus to recruited workers has been made obligatory.

The special representative visited a number of undertakings in Angola which had been the subject of comment by the commission of inquiry appointed under article 26 of the ILO Constitution and in respect of which the Committee of Experts had continued to seek information in previous observations. His findings in this connection are as follows.

The Diamond Co. of Angola (which until 1961 had recruited labor through the intermediary of administrative officials and indigenous chiefs) discontinued recourse to professional recruiters in 1967, and now engages only workers who offer their services spontaneously and are employed under oral contracts of indefinite duration. This evolution has been accompanied by increases in wages, improved housing conditions for workers, improved working conditions resulting from increased mechanization, and expansion of various social services.

In the publicly owned ports and railways, recruited labor appears no longer to be employed in the port of Luanda. Both the Luanda Railway and the port of Lobito decided in 1970 to discontinue recourse to recruiting, and the former at the same time raised wage rates with a view to being able to attract a sufficient volume of labor offering its services spontaneously. On August 12, 1970, the Governor-General of Angola decided that, as from January 1, 1971, public services be prohibited from having recourse to professional recruiters.

The Cassequel Agricultural Co. has indicated that its policy is to eliminate recruiting. A mechanization program initiated in 1967 has already made possible a reduction of almost 50 percent in the number of recruited workers, and the special representative expresses the view that the carrying through of this mechanization program in the near future should normally contribute to the elimination of the employment of recruited labor.

The special representative obtained up-to-date information on the size and activities of the labor inspection services in Angola. He indicates that the Labor Institute and the labor inspectorate seek to insure the observance of laws and regulations relating to labor matters, including provisions aimed at insuring that recruiting, where still current, should not become a form of exploitation of

the workers. As already indicated, the supervision of recruiters by the public authorities appears to be applied with increasing strictness.

The special representative was informed that legislation for the reorganization and expansion of the labor administration services in Angola and Mozambique is at present under examination. The proposed reforms would include the extension of the public employment service, with a view to promoting the gradual extinction of private recruiting services carried on with a view to profit, and the strengthening of the labor inspectorate.

Mozambique. It appears from figures supplied by the Labor, Social Security and Social Welfare Institute of Mozambique that at the end of 1969 the employed labor force in Mozambique was estimated to consist of 494,000 workers, of whom 36,461 were classed as skilled workers subject to Legislative Instrument No. 1595 of April 28, 1956 and the remainder were classed as unskilled workers within the scope of the Rural Labor Code of 1962. The latter included 23,473 workers recruited by professional recruiters and employed under written contracts for fixed terms, and it was estimated that approximately an equal number of workers were engaged under written contracts following recruiting directly by the undertakings concerned. In 1969, 43,343 workers were recruited (28,726 by professional recruiters, 14,487 directly by undertakings).

In his report the special representative recalls that the ILO commission of inquiry which visited Mozambique in 1961 concluded that there was "no element of compulsion" in the recruiting of workers for South Africa. He states that, as the comments of the ILO supervisory bodies which lay at the basis of the present direct contacts did not refer to the position of these workers, he did not consider it necessary, within the framework of his mission, to examine the matter afresh.

As regards workers employed within Mozambique, the special representative points out that the total number of recruited workers at present represents at most 10 percent of the unskilled labor force employed in the public and private sectors, and that in recent years their number has been steadily diminishing. The total number of workers recruited appears to have declined from 117,239 in the period July 1962–June 1963 to 43,343 in 1969. A number of large plantations which, at the time of the commission of inquiry's proceedings in 1961, still engaged a part of their labor force by means of recruiting appear now to be employing exclusively workers who offered their services spontaneously at the place of employment and are engaged under oral contracts of indefinite duration.

The special representative indicates—

That in the case both of direct recruiting by undertakings and of professional recruiting the system of licensing by the public authorities applies;

That although (in contrast to Angola) there are no employment services specifically charged with placement functions, recruiting is subject to supervision by the administrative authorities;

That, while in many cases (again in contrast to the recruiting process current in Angola) recruiters and their agents have to travel about the country to find workers prepared to go to work in undertakings—and perhaps to persuade them to do so—he did not in the course of his contacts with the authorities, his visits to undertakings and his interviews with workers find evidence of coercion in the engagement of such labor.

The special representative indicates that in the field of wages policy, and more generally in its social policy, as well as in the development of labor inspection, Mozambique is lagging behind Angola. He points out that, while certain conclusions of the commission of inquiry indicated that in 1961 the position in Mozambique gave rise to fewer reserves than that in Angola, today the problems calling for attention appear to be greater in Mozambique. He recalls, however, that the problems relating to the employment of recruited labor are confined to 10 percent of the labor force in Mozambique, and points out that many cases of warnings, reports, fines, and withdrawal of recruiting licenses had been brought to his attention.

The special representative indicates that a substantial increase in minimum wage rates is contemplated in Mozambique in 1971 and that the reorganization and strengthening of the Mozambique labor administration are under consideration. He expresses the view that the contemplated reforms (which would include the establishment of a network of public manpower services) would probably lead to the gradual disappearance of recruiting.

The Committee has considered—with due regard to the findings and recommendations of the commission of inquiry appointed under article 26 of the ILO Constitution and to its own earlier observations—the detailed information on the factual situation in Angola and Mozambique which has become available as a result of the direct contacts. In the light of this information, it appears appropriate to conclude that there is no evidence from which it could be inferred that at the present time the legislative provisions which prohibit recourse to forced or compulsory labor and any form of coercion or improper pressure in connection with the recruiting of workers are not being observed.

APPENDIX 14

EXCHANGE OF LETTERS BETWEEN CHAIRMAN DIGGS AND THE DEPARTMENT OF THE TREASURY REGARDING THE DEPARTMENT'S RESPONSES TO INQUIRIES MADE BY THE CHAIRMAN AT THE TIME OF THE DEPARTMENT'S APPEARANCE BEFORE THE SUBCOMMITTEE ON DECEMBER 7, 1971

FEBRUARY 10, 1972.

HON. JOHN R. PETTY,
*Assistant Secretary for International Affairs,
Department of the Treasury, Washington, D.C.*

DEAR MR. PETTY: I refer to your testimony before the Subcommittee on Africa on Tuesday, December 7, 1971, in the hearings of the subcommittee on U.S. involvement in southern Africa.

On that occasion it was requested that your Department furnish the committee with documentation and information on many aspects relating to the subject under inquiry. The purpose of this letter is to reiterate my concern that the various questions be answered fully.

Further, I wish to underscore the following requests made to your Department that the subcommittee be provided with:

(a) a listing of all the goods being imported into the United States from South Africa;

(b) the finding of the Government, that is, the concerned agencies, specifically as to which of these goods is produced by (i) convict labor, (ii) indentured labor, (iii) forced labor;

(c) the applications of 19 U.S.C. 1307 in each case;

(d) the action which the Government is taking to enforce the statute with respect to each and all goods being imported from South Africa.

Sincerely,

CHARLES C. DIGGS,
Chairman, Subcommittee on Africa.

THE DEPARTMENT OF THE TREASURY,
Washington, D.C., February 16, 1972.

HON. CHARLES C. DIGGS,
Subcommittee on Africa of the Committee on Foreign Affairs, House of Representatives, Washington, D.C.

DEAR MR. DIGGS: In John Petty's absence, I am acknowledging your letter of February 10, 1972, concerning documentation and information on U.S. imports from South Africa.

Since the committee session in December, we have been pressing ahead to collect the material you requested. We expect to be able to furnish to you within a few days, a response covering the items spelled out in your letters. The remaining information for insertion in the record of the hearing is almost complete and should be available shortly.

Sincerely,

JOHN M. HENNESSY,
Acting Assistant Secretary.

FEBRUARY 22, 1972.

MR. JOHN M. HENNESSY,
Acting Assistant Secretary for International Affairs, Department of the Treasury, Washington, D.C.

DEAR MR. HENNESSY: I am aware that the Department is preparing the responses to the inquiries made by the subcommittee during the Department's ap-

pearance before the subcommittee on December 7. It is of special importance, however, that the information on the dollar costs to the United States, that is, revenue loss from 1966 to the present, because of the allowance of tax credits against U.S. income tax for payments to the South African Government for income earned in Namibia be furnished as expeditiously as possible.

I am therefore writing to request that the Department submit this information now without waiting for the final preparation of answers to the other questions raised during the hearing.

Your cooperation is appreciated.

Sincerely,

CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa.

THE DEPARTMENT OF THE TREASURY,
Washington, D.C., March 8, 1972.

HON. CHARLES C. DIGGS, Jr.,
*Chairman, Subcommittee on Foreign Affairs,
House of Representatives, Washington, D.C.*

DEAR MR. CHAIRMAN: I am enclosing a memorandum responding to the request contained in your letter of February 10, 1971, to former Assistant Secretary Petty of this Department and questions raised at a hearing before the Subcommittee on Africa of the House Committee on Foreign Affairs. The responses relate to importations from South Africa and the administration of the law respecting the importation of goods made or produced in whole or part by convict, indentured, or forced labor.

I understand that the Office of the Assistant Secretary for International Affairs will forward in the near future responses to your inquiries about other matters raised at the hearing.

Sincerely yours,

EUGENE T. ROSSIDES.

NOTE.—The information contained in this letter appears on pages 193–195 of the hearing, and on page 551 of the appendix.

MARCH 8, 1972.

HON. JOHN B. CONNALLY,
*Secretary of the Treasury,
Washington, D.C.*

DEAR MR. SECRETARY: We are writing to express our deep concern about the failure of the Department to implement the U.S. position on the illegality of the South African administration of Namibia by disallowing tax credits for monies paid to the illegal South African Administering Authority as taxes on income earned in the international territory of Namibia.

We wish to emphasize the facts of this situation:

The illegality of the South African Administering Authority was determined in a resolution by the United Nations General Assembly, GA Res. 2145, supported by the United States and affirmed by the Security Council, terminating South Africa's mandate over the international territory;

The validity of these United Nations resolutions was reaffirmed in the Advisory Opinion of June 21, 1971 of the International Court of Justice on "The Legal Consequences for States of the Continued Presence of South Africa in Namibia, notwithstanding Security Council Resolution 276," and (1) that the South African Government is illegally occupying Namibia, and (2) that states have a duty to recognize the illegality of South Africa's presence in Namibia and the invalidity of its acts in behalf and concerning Namibia;

The acceptance by the U.S. Government of the conclusions of the International Court of Justice;

U.S. international legal obligations "to refrain from any dealings with the Government of South Africa implying recognition of, the legality of, or lending support or assistance to, such presence and administration."

In sum, what is involved here is the allowance of credits against U.S. income tax obligations for moneys paid to an administering authority formally adjudi-

cated to be illegal by the highest international tribunal and accepted as such by the U.S. Government.

Clearly, the issues raised by this matter are sui generis and Internal Revenue Service policy in cases relating to credits for moneys paid as income taxes to unrecognized authorities is not relevant. Nor would precedents involving taxes paid to de facto authorities or to enemy governments be pertinent since tax credits for payments to South Africa for income earned in Namibia involve payments to an authority formally adjudged to be illegal. Nor is the IRS practice of having tax matters independent of political or foreign policy considerations relevant; for in this case the legal—as distinguished from a foreign policy position regarding a non-recognized regime or a government with which we do not have diplomatic relations—is the crux of the matter.

Inasmuch as international law is the law of the land, credits against U.S. income taxes for moneys paid to South Africa on income earned in Namibia should be disallowed.

We note that in his testimony before the Subcommittee on Africa on December 7, the Honorable John R. Petty, the former Assistant Secretary for International Affairs for the Department of the Treasury, said:

"In view of the illegality of South African control of this territory under the 1966 Resolution of the United Nations, we believe there is a question as to whether taxes imposed and collected by the South African Government on income earned in South-West Africa can properly be considered taxes under U.S. legislation for purposes of granting a foreign tax credit."

We call your attention to the "Message from the President of the United States transmitting His Third Annual Report on the State of United States Foreign Policy" of February 9, 1972, wherein President Nixon stated, inter alia:

"In Namibia, South Africa continues to resist the efforts of the United Nations on behalf of self-determination. It rejects the 1971 holding of the International Court of Justice that South Africa is obliged to quit Namibia. We accept that holding and continue to discourage U.S. investment in Namibia. We seek to encourage peaceful ways of realizing and protecting the rights of the people of Namibia."

We further draw your attention to Security Council Resolution 283, which was supported by the United States, and which reads in pertinent part:

The Security Council—

4. Calls upon all states to insure that companies and other commercial and industrial enterprises owned by, or under direct control of the state, cease all dealings with respect to commercial or industrial enterprises or concessions in Namibia;

5. Calls upon all states to withhold from their nationals or companies of their nationality not under direct government control, government loans, credit guarantees and other forms of financial support that would be used to facilitate trade or commerce with Namibia;

6. Calls upon all states to insure that companies and other commercial enterprises owned by the state or under direct control of the state cease all further investment activities including concessions in Namibia;

7. Calls upon all states to discourage their nationals or companies of their nationality not under direct governmental control from investing or obtaining concessions in Namibia, and to this end withhold protection of such investment against claims of a future lawful government of Namibia.

We further note the statement of the U.S. Representative to the Security Council during the consideration of Security Council Resolution No. 301 of October 20, 1971:

"The resolution takes note of the advisory opinion of the International Court of Justice, particularly its conclusions. For our part, the United States accents these conclusions which declare in paragraph 133 that South Africa is under obligation to withdraw its administration from Namibia immediately and thus put an end to its occupation of the territory and which further declare that member states are 'under obligation to recognize the illegality of South Africa's presence in Namibia and the invalidity of its acts on behalf of or concerning Namibia, and to refrain from any dealings with the Government of South Africa implying recognition of the legality of, or lending support or assistance to, such presence and administration.' In his speech 2 weeks ago in the General Assembly, Secretary of State William P. Rogers stated our acceptance of these conclusions and observed this was consistent with our support of practical and peaceful means to achieve self-determination and end racial discrimination.

"Our acceptance also reflects the importance which my government attaches to the Court. We consider that this advisory opinion adds a significant and authoritative legal element to the effort of the international community to make it possible for the people of the territory to enjoy their right to self-determination. Our acceptance, of course, does not necessarily imply approval of all the Court's reasoning. We note in this connection concerns about charter interpretation which had been mentioned by several Council members.

"The resolution reaffirms Resolution 283, which urges member states to take a number of actions vis-a-vis Namibia."

In closing, we wish to reiterate our deep concern that the Department is not disallowing income tax credits for moneys paid to the illegal South African Administering Authority as taxes on income earned in the international territory of Namibia.

Sincerely,

CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa.

CC: The Honorable David D. Newsom, Assistant Secretary of State for African Affairs.

Bella S. Abzug, M.C.
Herman Badillo, M.C.
Jonathan B. Bingham, M.C.
Shirley Chisholm, M.C.
William Clay, M.C.
George W. Collins, M.C.
John Conyers, Jr., M.C.
Ronald V. Dellums, M.C.
Robert F. Drinan, M.C.
Don Edwards, M.C.
Walter E. Fauntroy, M.C.
Donald M. Fraser, M.C.
Augustus F. Hawkins, M.C.
Ralph H. Metcalfe, M.C.
Robert N. C. Nix, M.C.

Charles B. Rangel, M.C.
Ogden R. Reid, M.C.
Benjamin S. Rosenthal, M.C.
William F. Ryan, M.C.
James H. Scheuer, M.C.
Louis Stokes, M.C.
Edward W. Brooke, U.S.S.
Fred R. Harris, U.S.S.
Jacob K. Javits, U.S.S.
George McGovern, U.S.S.
Edmund S. Muskie, U.S.S.

OFFICE OF THE SECRETARY OF THE TREASURY,
Washington, D.C., March 10, 1972.

Hon. CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: The Secretary has asked me to acknowledge your letter of March 8, endorsed by a number of your colleagues, expressing concern that the Treasury is not disallowing income tax credits for moneys to the illegal South African Administering Authority as taxes on income earned in the international territory of Namibia. Your views have been brought to the attention of the officials concerned with this matter for consideration and further action.

Sincerely yours,

JAMES E. SMITH,
*Special Assistant to the Secretary,
Congressional Relations.*

MAY 1, 1972.

Hon. JOHN B. CONNALLY, Jr.,
*Secretary of the Treasury,
Washington, D.C.*

DEAR MR. SECRETARY: I requested in my letter of February 10, 1972 to Mr. John R. Petty that the Department respond fully to each question, and that the Department provide the subcommittee with:

- (a) A listing of all the goods being imported into the United States from South Africa;
- (b) The finding of the Government; that is, the concerned agencies, specifically as to which of these goods is produced by (i) convict labor, (ii) indentured labor, (iii) forced labor;
- (c) The applications of 19 U.S.C. 1307 in each case;
- (d) The action which the Government is taking to enforce the statute with respect to each and all goods being imported from South Africa.

I am gravely concerned that the letter of March 8 from Mr. Rossides did not even purport to be responsive. In particular, the reply only addressed section (1) of subpart (b) with no consideration at all of the remaining questions.

I reiterate the request that the Department provide the information as requested without any further delay, and that the Department submit the answers to the questions on other matters raised at the bearing on December 7, 1971 before the Subcommittee on Africa of the House Foreign Affairs Committee.

Sincerely,

CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa.

OFFICE OF THE SECRETARY OF THE TREASURY,
Washington, D.C., May 3, 1972.

HON. CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: For the Secretary, I am acknowledging your letter of May 1 regarding questions submitted by your subcommittee which you feel were not fully answered by this Department in connection with importation of goods from South Africa. Please be assured that your request has been brought to the attention of the officials concerned with this matter.

Sincerely yours,

JAMES E. SMITH,
*Special Assistant to the Secretary,
Congressional Relations.*

MAY 31, 1972.

HON. JOHN B. CONNALLY, Jr.,
*Secretary of the Treasury,
Washington, D.C.*

DEAR MR. SECRETARY: I refer to the letter of March 10 from Mr. James E. Smith in interim reply to the expression of concern by me and a number of my colleagues on March 8 concerning the disallowance of tax credits for moneys paid to South Africa for operations in the international territory of Namibia.

I am writing to express my concern that no substantive response has been forthcoming from the Department.

Sincerely,

CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa.

THE DEPARTMENT OF THE TREASURY,
Washington, D.C., June 19, 1972.

HON. CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa, Committee on Foreign Affairs, House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: On behalf of the Secretary, I am responding to your further letter of May 1, 1972, about questions raised at a hearing before your subcommittee.

I am enclosing a list furnished by the U.S. Tariff Commission of imports into the United States from the Republic of South Africa for the calendar year 1970, the latest available (item (a) of your request).

In response to items (b) and (c), this Department has made no findings that any of the goods listed is being produced by convict labor, indentured labor, or forced labor. Consequently, there is no basis for the application of 19 U.S.C. 1307 to any such goods.

In response to item (d), the action taken by the Department with respect to products of South African deciduous fruit farms, under procedures explained in the memorandum which accompanied my March 8 letter, is the sole enforcement measure in effect under the statute for South African imports.

Sincerely yours,

EUGENE T. ROSSIDES.

JULY 17, 1972.

HON. GEORGE P. SHULTZ,
Secretary of the Treasury,
Washington, D.C.

DEAR MR. SECRETARY: In reviewing the records of the hearing before the subcommittee on the subject of U.S. Business Involvement in Southern Africa on December 7, 1971, I note that the information supplied by Treasury in response to the request made at that hearing is incomplete. I refer here to the request for full documentation on the amount of money per year which has been taken as credit against U.S. income tax by reason of tax payments to the illegal South African administering authority in the international territory of Namibia, from October 1966 to the end of fiscal year 1971, that is, June 30, 1971. I enclose a copy of the page of the transcript showing that particular question, as well as a copy of the answer which was submitted by Treasury, and which, as you note, failed to address this particular inquiry.

It would be greatly appreciated if the subcommittee could be furnished with this documentation without any further delay.

Sincerely,

CHARLES C. DIGGS, Jr.,
Chairman, Subcommittee on Africa.

APPENDIX 15

INCOME TAX TREATY BETWEEN THE UNION OF
SOUTH AFRICA AND THE UNITED STATES *

[¶ 7903]

**Convention Between the Government of the United States of America
and the Government of the Union of South Africa for the Avoidance
of Double Taxation and for Establishing Rules of Reciprocal
Administrative Assistance with Respect to Taxes on Income.**

The Government of the United States of America and the Government of the Union of South Africa, being desirous of avoiding double taxation and of establishing rules of reciprocal administrative assistance in the case of income taxes, have decided to conclude a Convention and for that purpose have appointed as their respective Plenipotentiaries:

The Government of the United States of America: General Thomas Holcomb, Envoy Extraordinary and Minister Plenipotentiary of the United States of America,
and

The Government of the Union of South Africa: the Right Honourable Jan Hendrik Hofmeyr, Acting Prime Minister and Acting Minister of External Affairs of the Union of South Africa,

who, having communicated to one another their full powers found in good and due form, have agreed upon the following Articles:

[¶ 7904] Article I

(1) The taxes referred to in this Convention are:

(a) In the case of the United States of America: The Federal income taxes, including surtaxes and excess-profits taxes.

(b) In the case of the Union of South Africa the following taxes imposed under the income tax laws of the Union: Normal and Super Taxes, Undistributed Profits Tax, Non-resident Shareholders' Tax, Excess Profits Duty and Trade Profits Special Levy.

(2) It is mutually agreed that the present Convention shall also apply to any other or additional income taxes imposed by either contracting State, subsequent to the date of signature of this Convention, upon substantially the same bases as the taxes enumerated therein.

[¶ 7905] Article II

As used in this Convention:

(a) The terms "person", "individual" and "corporation" shall have the same meanings, respectively, as they have under the revenue laws of the taxing State or the State furnishing the information, as the case may be, provided that the term "corporation" when used in relation to the Union of South Africa shall be regarded as the equivalent of the term "company" as used in the revenue laws of that State.

(b) The term "enterprise" includes every form of undertaking, whether carried on by an individual, partnership, corporation or any other entity.

(c) The term "enterprise of one of the contracting States" means, in respect of each contracting State, an individual resident therein or a corporation, partnership or other entity created or organized in or under the laws of that State, or the laws of any of its States, Territories or provinces, as the case may be, engaged in the carrying on of an enterprise in the territory of that State.

(d) The term "permanent establishment" includes branches, mines and oil wells, farms, timber lands, plantations, factories, workshops, warehouses, offices,

*Signed at Pretoria December 13, 1946; entered into force July 15, 1952. 3 UST 3821; TIAS 2510; 167 UNTS 171.

Protocol supplementing the convention of December 13, 1946. Signed at Pretoria July 14, 1950; entered into force July 15, 1952. 3 UST 3821; TIAS 2510; 167 UNTS 171.

[¶ 7905]—Continued

agencies and other fixed places of business of an enterprise, but does not include a subsidiary corporation. When an enterprise of one of the contracting States carries on business in the other contracting State whether personally, directly or through a nominee or through an employee or agent there who has authority to contract for his employer or principal or has a stock of merchandise from which he regularly fills orders which he receives, such enterprise shall be deemed to have a permanent establishment in the latter State. The fact that an enterprise of one of the contracting States has business dealings in the other contracting State through a commission agent, broker or other independent agent, shall not be held to mean that such enterprise has a permanent establishment in the latter State.

(e) The term "Commissioner for Inland Revenue" means the Commissioner for Inland Revenue of the Union of South Africa or his duly authorized representative.

(f) The term "Commissioner of Internal Revenue" means the Commissioner of Internal Revenue of the United States of America or his duly authorized representative.

(g) The term "competent authority" means the Commissioner for Inland Revenue or the Commissioner of Internal Revenue and their duly authorized representatives.

(h) The term "United States of America", when used in the geographical sense, includes only the states, the territories of Alaska and Hawaii, and the District of Columbia.

(i) The term "industrial and commercial profits" means industrial and commercial income but shall not include income from or in the form of rentals, royalties, interest, dividends, management charges, compensation for labour or personal services, or income from the operation of ships or aircraft, or gains derived from the sale or exchange of capital assets, and the terms "profit" and "profits" mean income.

(j) The terms "rentals" and "royalties" shall include rentals or royalties arising from leasing real or immovable or personal or movable property or from any interest in such property, including rentals or royalties for the use of, or for the privilege of using, patents, copyrights, secret processes and formulae, goodwill, trademarks, trade brands, franchises and other like property.

(k) The term "interest" shall include income arising from interest-bearing securities, public obligations, government or municipal securities, mortgages, corporate or debenture bonds, loans, deposits and current accounts.

(l) The term "dividends" shall include all distributions of the earnings or profits of corporations.

[¶ 7906] Article III

(1) The citizens of one of the contracting States residing within the other contracting State shall not be subjected to the payment of more burdensome taxes than the citizens of such other State.

(2) The provisions of this Convention shall not be construed to restrict in any manner any exemption, deduction, credit or other allowance now or hereafter accorded by the laws of either of the contracting States in the determination of the tax imposed by such State.

(3) Following any appreciable changes made in the fiscal laws of either of the contracting States, the competent authorities of the two contracting States may consult together.

[¶ 7907] Article IV

(1) Notwithstanding any other provision of this Convention, the United States of America in determining the taxes of its citizens, or residents, or corporations, may include in the basis upon which such taxes are imposed, all items

of income taxable under the Revenue Laws of the United States of America, as though this Convention had not come into effect. The United States of America shall, however, deduct from the taxes thus computed the amount of Union income tax paid. This deduction shall be made in accordance with the benefits and limitations of Section 131 of the United States Internal Revenue Code as in effect on the day of the entry into force of this Convention. It is agreed that by virtue of the provisions of paragraph (2) of this Article the Union of South Africa satisfies the "similar credit" requirement set forth in sub-section (a) (3) of that section.

(2) The Union of South Africa in imposing its taxes shall exempt from such taxes and shall not take into account in the determination of such taxes income derived from sources within the United States of America in accordance with the income tax laws of the Union in effect on the day of entry into force of this Convention.

[¶ 7908] Article V

(1) An enterprise of one of the contracting States is not subject to taxation by the other contracting State in respect of its industrial and commercial profits except in respect of such profits allocable to its permanent establishment in the latter State.

(2) No account shall be taken in determining the tax in one of the contracting States, of the mere purchase of merchandise effected therein by an enterprise of the other State.

(3) For the purposes of this Convention, the term "industrial and commercial profits" shall not include the items of income excluded from the definition of that term in paragraph (i) of Article II. Subject to the provisions of this Convention such items of income shall be taxed separately or together with industrial and commercial profits in accordance with the laws of the contracting States.

[¶ 7909] Article VI

(1) If an enterprise of one of the contracting States has a permanent establishment in the other State, there shall be attributed to such permanent establishment the net industrial and commercial profits which it might be expected to derive if it were an independent enterprise engaged in the same or similar activities under the same or similar conditions. Such net profits will, in principle, be determined on the basis of the separate accounts pertaining to such establishment.

(2) The competent authority of the taxing State may, when necessary, in execution of paragraph (1) of this Article, rectify the accounts produced, notably to correct errors and omissions or to reestablish the prices of remunerations entered in the books at the value which would prevail between independent persons dealing at arm's length.

(3) If (a) an establishment does not produce an accounting showing its own operations, or (b) the accounting produced does not correspond to the normal usages of the trade in the country where the establishment is situated, or (c) the rectifications provided for in paragraph (2) of this Article cannot be effected the competent authority of the taxing State may determine the net industrial and commercial profits by applying such methods or formulae to the operations of the establishment as may be fair and reasonable.

(4) To facilitate the determination of industrial and commercial profits allocable to the permanent establishment, the competent authorities of the contracting States may consult together with a view to the adoption of uniform rules of allocation of such profits.

[¶ 7910] Article VII

When an enterprise of either of the contracting States, by reason of its participation in the management or capital of an enterprise of the other contracting State, makes with or imposes on the latter in their commercial or financial relations conditions different from those which would be made with

[¶ 7910]—Continued

or imposed on an independent enterprise, any profits which should normally have appeared in the accounts of the latter enterprise, but which have been in this manner diverted to the former enterprise may, subject to applicable measures of appeal, be incorporated in the taxable profits of the latter enterprise. To facilitate such rectifications as may appear fair and reasonable the competent authorities of the two contracting States may consult together.

[¶ 7911] Article VIII

(1) Compensation, other than pensions, for labour or personal services performed in one of the contracting States, paid by the other contracting State or by the political subdivisions or territories or possessions thereof to individuals who are not ordinarily resident in the former State, shall be exempt from taxation by such former State.

(2) Pensions and life annuities derived from sources within one of the contracting States and paid to individuals in the other State shall be exempt from taxation by the latter State.

[¶ 7912] Article IX

A professor or teacher from one of the contracting States who visits the other contracting State for the purpose of teaching, for a period not exceeding two years, at a university, college, school or other educational institution in such other contracting State shall be exempted by such other contracting State from tax on his remuneration for such teaching for such period.

[¶ 7913] Article X

Students or business apprentices from one of the contracting States residing in the other contracting State for purposes of study or for acquiring business experience shall not be taxable by the latter State in respect of remittances received by them from within the former State for the purposes of their maintenance or studies.

[¶ 7914] Article XI

Income derived from sources within one of the contracting States by a religious, scientific, literary, educational, or charitable organization of the other contracting State shall be exempt from taxation by the State from which the income is derived if, within the meaning of the laws of that State such organization would, if established in that State be exempt in respect of such income, and if within the meaning of the laws of the other State it would be exempt in respect of income derived from sources within such other State.

[¶ 7915] Article XII [*]

Dividends and interest paid on or after the effective date of this Convention by a corporation created or organized under the laws of the Union of South Africa to individual residents of the Union of South Africa other than citizens of the United States of America, or to corporations created or organized under laws of the Union of South Africa shall, to the extent that such dividends and interest are taxed by the Union of South Africa, be exempt from the taxes imposed by the United States of America.

[¶ 7916] Article XIII

Where a taxpayer shows proof that the action of the revenue authorities of the contracting States has resulted in double taxation in his case in respect of any of the taxes to which this Convention relates, he shall be entitled to lodge a claim with the State of which he is a citizen or resident or, if the taxpayer is a corporation or other entity, with the State in which it was created or organized. If the claim should be deemed worthy of consideration, the competent authority

* Article XII deleted by Article V of the Protocol.—CCH.

of such State may consult with the competent authority of the other State to determine whether the double taxation in question may be avoided in accordance with the terms of this Convention.

[¶ 7917] Article XIV

With a view to the more effective imposition of the taxes to which this Convention relates, each of the contracting States undertakes to furnish to the other contracting State such information in the matter of taxation, which the competent authority of the former contracting State have at their disposal or are in a position to obtain under their own law, as may be of use to the competent authority of such other State in the assessment of the taxes to which this Convention relates and to lend assistance in the service of documents in connection therewith. Such information and correspondence relating to the subject matter of this Article shall be exchanged between the competent authorities of the contracting States in the ordinary course or on request.

[¶ 7918] Article XV

(1) Each contracting State undertakes to lend assistance and support in the collection of the taxes to which this Convention relates, together with interest, costs and additions to the taxes and fines not being of a penal character. The contracting State making such collections shall be responsible to the other contracting State for the sums thus collected.

(2) In the case of applications for enforcement of taxes, revenue claims of each of the contracting States which have been finally determined shall be accepted for enforcement by the other contracting State and collected in that State in accordance with the laws applicable to the enforcement and collection of its own taxes.

(3) The applications shall be accompanied by such documents as are required by the laws of the State making the application to establish that the taxes have been finally determined.

(4) If the revenue claim has not been finally determined the State to which application is made may, at the request of the other contracting State, take such measures of conservancy as are authorized by the revenue laws of the former State in relation to its own taxes.

[¶ 7919] Article XVI

(1) In the administration of the provisions of this Convention relating to exchange of information, service of documents and mutual assistance in collection of taxes, fees and costs incurred in the ordinary course shall be borne by the State to which application is made but extraordinary costs incident to special forms of procedure shall be borne by the applying State.

(2) Documents and other communications or information contained therein, transmitted under the provisions of this Convention by one of the competent authorities to the competent authority of the other contracting State shall not be used by the latter authority except in the performance of their duties in the determination, assessment and collection of the taxes.

[¶ 7920] Article XVII

(1) Such regulations as may be necessary to interpret and carry out the provisions of this Convention may be prescribed in each of the contracting States. With respect to the provisions of this Convention relating to exchange of information, service of documents and mutual assistance in the collection of taxes, the competent authorities may, by common agreement, prescribe rules concerning matters of procedure, forms of application and replies thereto, conversion of currency, disposition of amounts collected, minimum amounts subject to collection and related matters.

[[7920]—Continued

(2) The competent authorities of the two contracting States may communicate with each other directly for the purpose of giving effect to the provisions of this Convention.

[[7921] Article XVIII

(1) This Convention shall be ratified and the instruments of ratification shall be exchanged at Washington as soon as possible.

(2) This Convention shall become effective on the first day of July, 1946, and except in matters of administrative assistance shall first be applied in respect of income arising on or after that date. It shall continue effective for a period of three years from that date and indefinitely after that period, but may be terminated by either of the contracting States at the end of the three-year period or at any time thereafter provided that at least six months prior notice of termination has been given, the termination to become effective the first day of July following the expiration of the six-month period.

IN WITNESS WHEREOF, the respective Plenipotentiaries have signed this Convention and have affixed thereto their seals.

Done in duplicate in English and Afrikaans texts at Pretoria this thirteenth day of December, 1946.

For the Government of the United States of America:

THOMAS HOLCOMB [SEAL]

For the Government of the Union of South Africa:

JAN H. HOFMEYR [SEAL]

[[7922-7950] Reserved.

[¶ 7956] Article IV

Article V of the Convention of December 13, 1946, is amended by changing the period at the end of paragraph (1) to a comma and the addition thereafter of the words "Provided that if such enterprise is a private company having a permanent establishment within the Union of South Africa nothing in this paragraph shall affect any provisions of the law of the Union of South Africa regarding the imposition upon the shareholders of that private company of the taxes payable in respect of its income."

[¶ 7957] Article V

The Convention of December 13, 1946, is amended by the deletion of Article XII.

[¶ 7958] Article VI

Article XIV of the Convention of December 13, 1946, is amended by inserting at the end thereof the following sentence: "No information shall be exchanged which would disclose any trade secret or trade process."

[¶ 7959] Article VII

Article XV of the Convention of December 13, 1946, is amended by deleting paragraph (4) and substituting the following:

"(4) The assistance provided for in this Article shall not be accorded in respect of a citizen or national or corporation of the State to which application is made."

[¶ 7960] Article VIII

(1) This protocol shall be ratified and the instruments of ratification thereof shall be exchanged at Washington as soon as possible.

(2) This protocol shall be regarded as an integral part of the Convention of December 13, 1946, and shall, except as provided in paragraph 3 of this Article, become effective and continue effective in accordance with Article XVIII (2) of that Convention and, in the event of termination of such Convention, shall terminate simultaneously with such Convention.

(3) Notwithstanding the provisions of Article XVIII of the Convention signed at Pretoria on December 13, 1946, the provisions of Articles I, II and III of this protocol shall become effective and first be applied in respect of income arising on or after the first day of July, 1948.

IN WITNESS WHEREOF the undersigned plenipotentiaries, being authorized thereto by their respective Governments, have signed this protocol and have affixed thereto their seals.

DONE in duplicate, in the English and Afrikaans languages, at Pretoria this the fourteenth day of July, 1950.

For the Government of the United States of America:

[SEAL] BERNARD C. CONNELLY

Chargé d'Affaires ad interim of the United States of America.

For the Government of the Union of South Africa:

[SEAL] P. O. SAUER

Minister of Transport of the Union of South Africa.

ESTATE TAX TREATY BETWEEN THE UNION OF SOUTH AFRICA AND THE UNITED STATES

[¶ 7972]

Convention Between the United States and the Union of South Africa Relating to Taxes on Estates and Inheritances*

The Government of the United States of America and the Government of the Union of South Africa, desiring to conclude a Convention for the avoidance of double taxation and the prevention of fiscal evasion with respect to taxes on the estates of deceased persons, have appointed as their respective Plenipotentiaries:

The Government of the United States of America: General Thomas Holcomb, Envoy Extraordinary and Minister Plenipotentiary of the United States of America,

and

The Government of the Union of South Africa: Field Marshal the Right Honourable Jan Christiaan Smuts, Prime Minister and Minister of External Affairs of the Union of South Africa.

Who, having exhibited their respective full powers, found in good and due form, have agreed as follows:

[¶ 7973] Article I

- (1) The taxes which are the subject of the present Convention are:
 - (a) In the United States of America, the Federal estate tax, and
 - (b) In the Union of South Africa, the estate duty imposed by the Union.
- (2) The present Convention shall also apply to any other taxes of a substantially similar character imposed by either Contracting Party subsequently to the date of signature of the present Convention.

[¶ 7974] Article II

- (1) In the present Convention, unless the context otherwise requires:
 - (a) The term "United States" means the United States of America, and when used in a geographical sense means the States, the Territories of Alaska and of Hawaii, and the District of Columbia.
 - (b) The term "Union" means the Union of South Africa.
 - (c) The term "territory," when used in relation to one or the other Contracting Party, means the United States or the Union, as the context requires.
 - (d) The term "tax" means the United States Federal estate tax or the estate duty imposed by the Union, as the context requires.
 - (e) The term "Commissioner for Inland Revenue" means the Commissioner for Inland Revenue of the Union or his duly authorized representatives.
 - (f) The term "Commissioner of Internal Revenue" means the Commissioner of Internal Revenue of the United States, or his duly authorized representative.
 - (g) The term "competent authority" means the Commissioner for Inland Revenue or the Commissioner of Internal Revenue and their duly authorized representatives.
 - (h) The term "corporation" when used in relation to the Union shall be regarded as the equivalent of the term "company" as used in the revenue laws of that State.
- (2) In the application of the provisions of the present Convention by one of the Contracting Parties, any term not otherwise defined shall, unless the context otherwise requires, have the meaning which it has under the laws of that Contracting Party relating to the taxes which are the subject of the present Convention.

*Signed at Cape Town April 10, 1947; entered into force July 15, 1952. 3 UST 3792; TIAS 2509; 167 UNTS 211.

Protocol supplementing the estate tax convention of April 10, 1947. Signed at Pretoria July 14, 1950; entered into force July 15, 1952. 3 UST 3792; TIAS 2509; 167 UNTS 211.

[§ 7975] Article III

(1) For the purposes of the present Convention, the question whether a decedent was at the time of his death domiciled in any part of the United States or ordinarily resident in any part of the Union shall be determined in accordance with the laws in force in the United States and the Union respectively.

(2) Where a person was at the time of his death domiciled in any part of the United States or ordinarily resident in any part of the Union, then as regards the United States the situs of any of the following rights and interests, legal or equitable, which for the purposes of tax form part of the estate of such person or pass on his death, shall, for the purposes of the imposition of tax, be determined exclusively in accordance with the following rules, and as regards the Union, tax may be imposed on any of the following rights or interests which are deemed under those rules to be situated in its territory, but shall not be imposed on any of the said rights or interests which are deemed to be situated outside its territory unless such person was at the time of his death ordinarily resident in some part of its territory:

(a) Rights or interests (otherwise than by way of security) in or over immovable property shall be deemed to be situated at the place where such property is located;

(b) Rights or interests (otherwise than by way of security) in or over tangible movable property, other than such property for which specific provision is hereinafter made, and in or over bank or currency notes, other forms of currency recognized as legal tender in the place of issue, negotiable bills of exchange and negotiable promissory notes, shall be deemed to be situated at the place where such property, notes, currency or documents are located at the time of death, or, if *in transitu*, at the place of destination;

(c) Debts, secured or unsecured, including securities issued by any government, municipality or public authority and debentures and debenture stock issued by any corporation, but excluding the forms of indebtedness for which specific provision is made herein, shall be deemed to be situated in the United States if the decedent was at the time of his death domiciled in some part of the United States, and in the Union if the decedent was at the time of his death ordinarily resident in some part of the Union;

(d) Shares or stock in a corporation (including shares or stock held by a nominee where the beneficial ownership is evidenced by script certificates or otherwise) shall be deemed to be situated at the place in or under the laws of which such corporation was created or organized;

(e) Monies payable under a policy of assurance or insurance on the life of the decedent shall be deemed to be situated in the United States if the decedent was at the time of his death domiciled in some part of the United States, and in the Union if the decedent was at the time of his death ordinarily resident in some part of the Union;

(f) Ships and aircraft and shares thereof shall be deemed to be situated at the place of registration or documentation of the ship or aircraft;

(g) Goodwill as a trade, business or professional asset shall be deemed to be situated at the place where the trade, business or profession to which it pertains is carried on;

(h) Patents, trade marks and designs shall be deemed to be situated at the place where they are registered;

(i) Copyrights, franchises, and rights or licenses to use any copyrighted material, patent, trade mark or design shall be deemed to be situated at the place where the rights arising therefrom are exercisable;

(j) Rights or causes of action *ex delicto* surviving for the benefit of an estate of a decedent shall be deemed to be situated at the place where such rights or causes of action arose;

(k) Judgment debts shall be deemed to be situated at the place where the judgment is recorded;

Provided that if, apart from this paragraph, tax would be imposed by one Contracting Party on any property, this paragraph shall not apply to such property unless, by reason of its application or otherwise, tax is imposed or would but for some specific exemption be imposed thereon by the other Contracting Party.

[§ 7976] Article IV

(1) In determining the amount on which tax is to be computed permitted deductions shall be allowed in accordance with the law in force in the territory in which the tax is imposed.

(2) Where tax is imposed in the United States on the death of a person who was not domiciled in any part of the United States but was ordinarily resident in some part of the Union, or where tax is imposed in the Union on the death of a person who was not ordinarily resident in any part of the Union but was domiciled in some part of the United States, no account shall be taken, in determining the amount or rate of the tax so imposed, of property which is deemed under paragraph (2) of Article III to be situated outside the territory of the Contracting Party imposing such tax: provided that this paragraph shall not apply as respects tax imposed in the United States in the case of a United States citizen who at the time of his death was ordinarily resident in the Union.

[§ 7977] Article V

(1) Where the United States imposes tax by reason of a decedent's being its national, the United States shall allow against so much of its tax (as otherwise computed) as is attributable to property situated in the Union, a credit (not exceeding the amount of the tax so attributable) equal to so much of the tax imposed in the Union as is attributable to that property; but this paragraph shall not apply in a case to which paragraph (2) (a) or paragraph (3) is applicable

(2) Where each Contracting Party imposes tax on any property on the death of a person who at the time of his death was—

(a) domiciled in some part of the United States but not ordinarily resident in any part of the Union, or

(b) ordinarily resident in some part of the Union but not domiciled in any part of the United States,

the Contracting Party in some part of whose territory such person was so domiciled or ordinarily resident shall allow against so much of its tax (as otherwise computed) as is attributable to that property a credit (not exceeding the amount of the tax so attributable) equal to so much of the tax imposed in the territory of the other Contracting Party as is attributable to such property; provided that this paragraph shall not apply as respects tax imposed by the United States solely by reason of a decedent's being its national which is attributable to property situated outside the United States.

(3) Where each Contracting Party imposes tax on property on the death of a person who at the time of his death was domiciled in some part of the United States and ordinarily resident in some part of the Union—

(a) in the case of any property which is deemed under paragraph (2) of Article III to be situated in the territory of one only of the Contracting Parties, the other Contracting Party shall allow against so much of its tax (as otherwise computed) as is attributable to that property a credit (not exceeding the amount of the tax so attributable) equal to so much of the tax imposed in the territory of the first mentioned Contracting Party as is attributable to such property;

(b) in the case of any other property each Contracting Party shall allow against so much of its tax (as otherwise computed) as is attributable to the

[¶ 7977]—Continued

property a credit which bears the same proportion to the amount of its tax so attributable or to the amount of the other Party's tax attributable to the same property, whichever is the less, as the former amount bears to the sum of both amounts.

(4) For the purposes of this Article, the amount of the tax of a Contracting Party attributable to any property shall be ascertained after taking into account any credit, allowance or relief, or any remission or reduction of tax, otherwise than in respect of tax payable in the territory of the other Contracting Party.

(5) The allowance by the Union under this Article of a credit for tax imposed in the United States in respect of any property shall be subject to the condition that no deduction in respect of the tax so imposed shall be made for the purpose of determining the amount of the estate on which tax is chargeable in the Union.

[¶ 7978] Article VI

(1) Any claim for a credit or for a refund of tax founded on the provisions of the present Convention shall be made within six years from the date of the death of the decedent in respect of whose estate the claim is made, or, in the case of a reversionary interest where payment of tax is deferred until on or after the date on which the interest falls into possession, within six years from that date.

(2) Any such refund shall be made without payment of interest on the amount so refunded.

[¶ 7979] Article VII

With a view to the more effective imposition of the taxes to which the present Convention relates, each of the Contracting Parties undertakes to furnish to the other Contracting Party such information in the matter of taxation, which the competent authority of the former Contracting Party has at his disposal or is in a position to obtain under the laws of that Party, as may be of use to the competent authority of such other Party in the assessment of the taxes to which the present Convention relates and to lend assistance in the service of documents in connection therewith. Such information and correspondence relating to the subject matter of this Article shall be exchanged between the competent authorities of the Contracting Parties in the ordinary course or on request.

[¶ 7980] Article VIII

(1) Each Contracting Party undertakes to lend assistance and support in the collection of the taxes to which the present Convention relates, together with interest, costs, and additions to the taxes and fines not being of a penal character. The Contracting Party making such collections shall be responsible to the other Contracting Party for the sums thus collected.

(2) In the case of applications for enforcement of taxes, revenue claims of each of the Contracting Parties which have been finally determined shall be accepted for enforcement by the other Contracting Party and collected in the territory of that Party in accordance with the laws applicable to the enforcement and collection of its own taxes.

(3) The application shall be accompanied by such documents as are required by the laws of the Contracting Party making the application to establish that the taxes have been finally determined.

(4) If the revenue claim has not been finally determined the Contracting Party to which application is made may, at the request of the other Contracting

Party, take such measures of conservancy as are authorized by the revenue laws of the former Party in relation to its own taxes.

See also proposed amendment to Article VIII in proposed protocol at ¶ 7999.

[¶ 7981] Article IX

(1) In the administration of the provisions of the present Convention relating to exchange of information, service of documents, and mutual assistance in collection of taxes, fees and costs incurred in the ordinary course shall be borne by the Contracting Party to which application is made but extraordinary costs incident to special forms of procedure shall be borne by the applying Party.

(2) Documents and other communications or information contained therein, transmitted under the provisions of the present Convention by one of the competent authorities to the other shall not be used by the latter except in the performance of his duty in the determination, assessment and collection of the taxes.

[¶ 7982] Article X

(1) Such regulations as may be necessary to interpret and carry out the provisions of the present Convention may be prescribed by each of the Contracting Parties. With respect to the provisions of the present Convention relating to exchange of information, service of documents and mutual assistance in the collection of taxes, the competent authorities may, by common agreement, prescribe rules concerning matters of procedure, forms of application and replies thereto, conversion of currency, disposition of amounts collected, minimum amounts subject to collection, and related matters.

(2) The competent authorities of the two Contracting Parties may communicate with each other directly for the purpose of giving effect to the provisions of the present Convention.

[¶ 7983] Article XI

If any person liable for any of the taxes to which the present Convention relates can show that double taxation has resulted or may result in respect of such taxes he shall be entitled to lodge a claim or protest with the Contracting Party of which he is a citizen or resident, or, if a corporation or other entity, with the Contracting Party in which created or organized. If the claim or protest should be deemed worthy of consideration, the competent authority of such Party may consult with the competent authority of the other Party to determine whether the alleged double taxation exists or may occur and if so whether it may be avoided in accordance with the terms of the present Convention.

[¶ 7984] Article XII

The provisions of the present Convention shall not be construed to restrict in any manner any exemption, deduction, credit or other allowance now or hereafter accorded by the laws of one of the Contracting Parties in the determination of the tax imposed by such Contracting Party.

[¶ 7985] Article XIII

(1) The present Convention shall be ratified and the instruments of ratification shall be exchanged at Washington as soon as possible.

(2) The present Convention shall come into force on the date of exchange of instruments of ratification and shall be effective only as to—

(a) the estates of persons dying on or after such date; and

(b) the estate of any person dying before such date and after the 30th day of June, 1944, whose personal representative elects, in such manner as may be prescribed, that the provisions of the present Convention shall be applied to such estate.

[[7986] Article XIV

(1) The present Convention shall remain in force for not less than three years after the date of its coming into force.

(2) If, not less than six months before the expiration of such period of three years, neither of the Contracting Parties shall have given to the other Contracting Party, through diplomatic channels, written notice of its intention to terminate the present Convention, the Convention shall remain in force after such period of three years until either of the Contracting Parties shall have given written notice of such intention, in which event the present Convention shall not be effective as to the estates of persons dying on or after the date (not being earlier than the sixtieth day after the date of such notice) specified in such notice, or, if no date is specified, on or after the sixtieth day after the date of such notice.

IN WITNESS WHEREOF the above-mentioned Plenipotentiaries have signed the present Convention and have affixed thereto their seals.

DONE at Cape Town, in duplicate, in the English and Afrikaans languages, the tenth day of April, 1947.

For the Government of the United States of America:

[SEAL] T. HOLCOMB

For the Government of the Union of South Africa:

[SEAL] J. C. SMUTS

APPENDIX 16

EXCERPTS FROM THE CODE OF FEDERAL REGULATIONS ON MERCHANDISE PRODUCED BY CONVICT, FORCED OR INDENTURED LABOR AND STATEMENT FROM THE BUREAU OF CUSTOMS REGARDING SPECIAL REQUIREMENTS AND PROCEDURES TO BE FOLLOWED IN CONNECTION WITH THE ENTRY OF IMPORTATIONS OF FRUIT PRODUCTS FROM THE REPUBLIC OF SOUTH AFRICA

12.42 *Finding of Commissioners of Customs.*—(a) If any appraiser or other principal customs officer has reason to believe that any class of merchandise which is being, or is likely to be, imported into the United States is being produced, whether by mining, manufacture, or other means, in any foreign locality with the use of convict labor, forced labor, or indentured labor under penal sanctions so as to come within the purview of the first sentence of section 307, Tariff Act of 1930,²⁹ he shall communicate his belief to the Commissioner of Customs. Every such communication shall contain or be accompanied by a statement of substantially the same information as is required in paragraph (b), if in the possession of the appraiser or other officer or readily available to him.

(b) Any person outside the Customs Service who has reason to believe that merchandise produced in the circumstances mentioned in paragraph (a) is being, or is likely to be, imported into the United States and, if the production is with the use of forced labor or indentured labor under penal sanctions that merchandise of the same class is being produced in the United States in such quantities as to meet the consumptive demands of the United States may communicate his belief to any appraiser or the Commissioner of Customs. Every such communication shall contain, or be accompanied by (1) a full statement of the reasons for the belief, (2) a detailed description or sample of the merchandise, and (3) all pertinent facts obtainable as to the production of the merchandise abroad. If the foreign merchandise is believed to be mined, produced, or manufactured with the use of forced labor or indentured labor under penal sanctions, such communication shall also contain (4) detailed information as to the production and consumption of the particular class of merchandise in the United States and the names and addresses of domestic producers likely to be interested in the matter.

(c) If any information filed with an appraiser pursuant to paragraph (b) does not conform with the requirements of that paragraph, the communication shall be returned promptly to the person who submitted it with detailed written advice as to the respects in which it does not conform. If such information is found to comply with the requirements, it shall be transmitted by the appraiser within 10 days to the Commissioner of Customs, together with all pertinent additional information available to the appraiser.

(d) Upon receipt by the Commissioner of Customs of any communication submitted pursuant to paragraph (a) or (b) and found to comply with the requirements of the pertinent paragraph, the Commissioner will cause such investiga-

²⁹ "All goods, wares, articles, and merchandise mined, produced, or manufactured wholly or in part in any foreign country by convict labor or/and forced labor or/and indentured labor under penal sanctions shall not be entitled to entry at any of the ports of the United States, and the importation thereof is hereby prohibited, and the Secretary of the Treasury is authorized and directed to prescribe such regulations as may be necessary for the enforcement of this provision. The provisions of this section relating to goods, wares, articles, and merchandise mined, produced, or manufactured by forced labor or/and indentured labor, shall take effect on Jan. 1, 1932; but in no case shall such provisions be applicable to goods, wares, articles, or merchandise so mined, produced, or manufactured which are not mined, produced, or manufactured in such quantities in the United States as to meet the consumptive demands of the United States.

"Forced labor," as herein used, shall mean all work or service which is exacted from any person under the menace of any penalty for its nonperformance and for which the worker does not offer himself voluntarily," (Tariff Act of 1930, sec. 307; 19 U.S.C. 1307.)

tion to be made as appears to be warranted by the circumstances of the case and the Commissioner or his designated representative will consider any representations offered by foreign interests, importers, domestic producers, or other interested persons.

(e) If the Commissioner of Customs finds at any time that information available reasonably but not conclusively indicates that merchandise within the purview of section 307 is being, or is likely to be, imported, he will promptly advise all collectors of customs accordingly and the collectors shall thereupon withhold release of any such merchandise pending instructions from the Commissioner as to whether the merchandise may be released otherwise than for exportation.

(f) If it is determined on the basis of the foregoing that the merchandise is subject to the provisions of the said section 307, the Commissioner of Customs, with the approval of the Secretary of the Treasury, will publish a finding to that effect in a weekly issue of the Treasury Decisions and in the Federal Register.

(g) Any merchandise of a class specified in a finding made under paragraph (f) which is imported directly or indirectly from the locality specified in the finding and has not been released from customs custody before the date of publication of such finding in the Federal Register shall be considered and treated as an importation prohibited by section 307, Tariff Act of 1930, unless the importer establishes by satisfactory evidence that the merchandise was not mined, produced, or manufactured in any part with the use of a class of labor specified in the finding.

(h) The following findings made under the authority of section 307, Tariff Act of 1930 are currently in effect with respect to the merchandise listed below:

Merchandise and Country.—Furniture, clothes hampers, and palm leaf bags, Ciudad Victoria, Tamaulipas, Mexico. (T.D. Nos. 53408 and 54725).¹

(Sec. 307, 46 Stat 689; 19 U.S.C. 1307)

12.43 *Proof of admissibility.*—(a) If an importer of any article detained under section 12.42 (e) or (g) desires to contend that the article was not mined, produced, or manufactured in any part with the use of a class of labor specified in section 307, Tariff Act of 1930, he shall submit to the Commissioner of Customs within 3 months after the date the article was imported a certificate of origin in the form set forth below, signed by the foreign seller or owner of the article. If the article was mined, produced, or manufactured wholly or in part in a country other than that from which it was exported to the United States, an additional certificate in such form and signed by the last owner or seller in such other country, substituting the facts of transportation from such other country for the statements with respect to shipment from the country of exportation, shall be so submitted.

CERTIFICATE OF ORIGIN

I, _____, foreign seller or owner of the merchandise hereinafter described, certify that such merchandise, consisting of _____ of _____ (Quantity) _____ in _____ (Description) _____ (Number and kind of packages) bearing the following marks and numbers _____ was mined, produced, or manufactured by _____ (Name) at or near _____, and was laden on board _____ (Carrier to the United States) at _____ (Place of lading) which departed from _____ (Place of final departure from country of exportation) on _____ (Date); and that _____ (Class of labor specified in finding) was not employed in any stage of mining, production, or manufacture of the merchandise or of any component thereof.

Dated _____

(Signature)

(b) The importer shall also submit to the Commissioner of Customs within such 3-month period a statement of the ultimate consignee of the merchandise, showing in detail that he had made every reasonable effort to determine the source of the merchandise and of every component thereof and to ascertain the character of labor used in the production of the merchandise and each of its com-

ponents, the full results of his investigation, and his belief with respect to the use of the class of labor specified in the finding in any stage of the production of the merchandise or of any of its components.

(c) If the certificate or certificates and statement specified in paragraphs (a) and (b) are submitted within the time prescribed and the Commissioner finds that the merchandise is admissible, the collector of customs concerned will be advised to that effect, whereupon he shall release the merchandise upon compliance with the usual entry requirements. (Sec. 307, 46 Stat. 689; 19 U.S.C. 1307.)

12.44 Disposition.—Merchandise detained pursuant to section 12.42 may be exported at any time before it is deemed to have been abandoned as hereinafter provided for. If it has not been exported within 3 months after the date of importation, the collection shall ascertain whether the proof specified in section 12.43 has been submitted within the time prescribed in that section. If the proof has not been so submitted, or if the Commissioner of Customs advises the collector that the proof furnished does not establish the admissibility of the merchandise, the collector shall promptly advise the importer in writing that the merchandise is excluded from entry. Upon the expiration of 60 days after the delivery or mailing of such advice by the collector, the merchandise shall be deemed to have been abandoned and shall be destroyed, unless it has been exported or a protest has been filed as provided for in section 514, Tariff Act of 1930. (Sec. 307, 46 Stat. 689; 19 U.S.C. 1307.)

12.45 Transportation and marking of prison-labor products.—If any apparent violation of section 1761 or 1762, title 18, United States Code,³⁰ with respect to any imported article comes to the attention of a collector of customs, he shall detain the article and report the facts to the appropriate U.S. attorney. If the U.S. attorney advises the collector that action should be taken against the article, it shall be seized and held pending the receipt of further instructions from the U.S. attorney or the court.

TREASURY DEPARTMENT,
BUREAU OF CUSTOMS,
Washington, D.C., March 2, 1966.

Re Section 307, Tariff Act of 1930, as amended; section 12.42, Customs Regulations.

To: All Principal Customs Field Officers.

Subject: Special procedures for certain commodities; Entry of importations of deciduous fruit products from the Republic of South Africa.

1. PURPOSE

To advise customs officers of special requirements and procedures to be followed in connection with the entry of importations of fruit products from the Republic of South Africa.

2. BACKGROUND

Section 307, Tariff Act of 1930, as amended, prohibits the importation into the United States of goods manufactured or produced wholly or in part by the use

³⁰ "(a) Whoever knowingly transports in interstate commerce or from any foreign country into the United States any goods, wares, or merchandise manufactured, produced, or mined, wholly or in part by convicts or prisoners, except convicts or prisoners on parole or probation, or in any penal or reformatory institution, shall be fined not more than \$1,000 or imprisoned not more than 1 year, or both.

"(b) This chapter shall not apply to agricultural commodities or parts for the repair of farm machinery, nor to commodities manufactured in a Federal, District of Columbia, or State institution for use by the Federal Government, or by the District of Columbia, or by any State or political subdivision of a State." (18 U.S.C. 1761.)

"(a) All packages containing any goods, wares, or merchandise manufactured, produced, or mined wholly or in part by convicts or prisoners, except convicts or prisoners on parole or probation, or in any penal or reformatory institution, when shipped or transported in interstate or foreign commerce shall be plainly and clearly marked, so that the name and address of the shipper, the name and address of the consignee, the nature of the contents, and the name and location of the penal or reformatory institution where produced wholly or in part may be readily ascertained on an inspection of the outside of such package.

"(b) Whoever violates this section shall be fined not more than \$1,000, and any goods, wares or merchandise transported in violation of this section or section 1761 of this title shall be forfeited to the United States, and may be seized and condemned by like proceedings as those provided by law for the seizure and forfeiture of property, imported into the United States contrary to law." (18 U.S.C. 1762.)

of convict labor. The Bureau has received information that convict labor is used in various capacities on many fruit farms in the Western Cape region of the Republic of South Africa. Therefore, the competent authorities of South Africa have agreed to the adoption of a procedure designed to insure that deciduous fruit produced on those farms which make use of convict labor in any capacity will not be shipped to and offered for entry into the United States.

3. ACTION

The following entry requirements and procedures shall be enforced at all ports of entry in the United States as to the fruit products of the Republic of South Africa entered for consumption or for bonded warehousing in the United States:

Direct shipments to the United States

The Deciduous Fruit Board of South Africa, which has been duly appointed by the South African Government, has supplied the Bureau with an acceptable list of code marks designating those registered producers of export deciduous fruits who do not make use of convict labor in any capacity. The appropriate code number or numbers will appear on each individual export container of fruit produce shipped from the Republic of South Africa for the U.S. market and on a Certificate of Origin, attachment "A," to be presented with each customs entry of fruit for consumption or bonded warehousing in the United States. Such certificate will attest that convict labor was not used in any capacity on those farms whose code numbers appear on the certificate.

The certificates of origin shall furnish in addition to the other shipping information therein required:

1. The total number of units of each kind or type of fruit in the shipment.
2. The grand total of units of fruit of all descriptions in the entire shipment.
3. The code numbers of those farms which produced the fruit making up the entire shipment.

An eight-page list of code numbers is being separately furnished regional commissioners and collectors of customs. The Deciduous Fruit Board additionally has submitted to the Bureau a list, attachment "B," bearing the specimen signature of each member of the Board who has been authorized to sign the certificates of origin.

Indirect shipments to the United States

The Deciduous Fruit Board has indicated that problems of available shipping space may require some export shipments destined to the United States to be transshipped via Montreal, Canada. The following procedures will govern such transshipped importations:

Every shipment, or portion of a shipment consigned to the United States via DFB headquarters at Montreal, when entered for consumption, or bonded warehouse, must be supported by an original DFB certificate of origin covering the shipment; or, in the case of transshipments from DFB headquarters at Montreal of portions of a shipment the subject of a DFB certificate of origin, by a copy of the applicable certificate of origin, such copy to bear the signed statement of an authorized official or agency representative of DFB in Montreal that it represents a true copy of the pertinent original certificate of origin.

An original certificate of origin covering a shipment transshipped via Montreal and there broken up for the U.S. market as demand materializes may be held as a control document by the agency representative of DFB in Montreal until the entire quantity of the shipment received at Montreal has been disposed of, at which time the original certificate of origin should be delivered to the Senior Customs Representative, 1564 McGregor Avenue, Montreal 25, Canada, to be retained by that officer for customs reference as necessary, or other customs purpose.

This circular shall be effective as to importations of such deciduous fruit products entered for consumption, or for bonded warehousing, on or after March 15, 1966.

LESTER D. JOHNSON,
Commissioner of Customs.

ATTACHMENT A—CERTIFICATE OF ORIGIN

We, the Deciduous Fruit Board of South Africa, duly appointed by the South African Government, with respect to the fruit herein described, certify that such merchandise, consisting of (quantities¹ and descriptions of fruit in described kinds of unit containers or packages), bearing (marks, numbers, or symbols on outermost packings), was produced or manufactured in South Africa by (code numbers of farms); that convict labor was not employed in any stage of the production, manufacture or packaging of the merchandise; and that the merchandise, shipped to (name of consignee) was laden at (place) on board (vessel or other carrier) which departed from (port of final departure from South Africa or country of exportation) on (date).

ATTACHMENT B

SAGTEVRUGTERAAD DECIDUOUS FRUIT BOARD,
Cape Town, South Africa, January 21, 1966.

Hereunder the names and specimen signatures of officials of the Board authorized to sign Certificates of Origin as required by the U.S. Department of Customs:

Signed N. A. B. BESTIER,
General Manager.
Signed L. A. BEARD,
Deputy General Manager.
Signed N. L. J. VAN RENSBURG,
Chief Marketing Officer.

¹ In terms of total units of quantity of each described fruit in shipment, together with grand total of the units of quantity of fruit of all descriptions in shipment.

