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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

MALAGASY - TELECOMMUNICATIONS PHASE II

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AID-DLC/P-1090

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

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AID-DLC/P-1090

May 25, 1973

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Malagasy - Telecommunications, Phase II

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed $1,200,000 to the Malagasy Republic to be relent to the Generale des Postes et Telecommunications to assist in financing the foreign exchange costs of goods and related services for the Malagasy Telecommunications Project - Phase II.

Please advise us as early as possible but in no event later than close of business on Wednesday, June 6, 1973, if you have a basic policy issue arising out of this proposal.

Development Loan Committee
Office of Development
Program Review

Attachments:
Summary and Recommendations
ANNEXES I - X

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MALAGASY REPUBLIC: TELECOMMUNICATIONS SYSTEM EXPANSION AND MODERNIZATION, PHASE II SUMMARY AND RECOMMENDATIONS

1. Borrower: The Direction Generale des Postes and Telecommunications (P&T) of the Government of the Malagasy Republic (GOMR)

2. Amount: $1.2 million

3. Project Financing:

	($ thousands)
A.I.D. Loan	1,200
P&T Contribution	300
TOTAL	1,500

4. Purpose of Loan: To finance the foreign exchange costs of the purchase of materials and services required for the expansion and modernization of the Malagasy Republic telecommunications facilities.

5. Description of Project: The project consists of the purchase and installation of materials required for the rehabilitation of main telephone trunk lines and local links to these lines in rural areas in the western and southern regions of the Malagasy Republic. Under the proposed project approximately 712 miles of new lines will be installed and 17 miles of circuits added to existing pole lines over a three-year period.

6. Background: In February 1967, A.I.D. authorized a $2.0 million loan for the expansion and modernization of the telecommunications system in the central and northern regions of the Malagasy Republic. The project consisted of the purchase of materials for 1970 miles of new telephone lines and 187 miles of circuits added to existing poles, to be installed over a four-year period. The materials arrived from the U.S. in 1968 and 1969 and about 1300 miles of lines were installed in 1969, 1970, and 1971. Progress was virtually halted in late 1971 and 1972, due in large measure to cyclone damage to the P & T's lines which required immediate repair. Construction resumed in late 1972, and all installations will be completed by mid or late 1974, with the exception of 226 miles which cannot be installed until 1975 due to construction of a road along the same route. In October 1972, representatives of the Malagasy Republic requested that A.I.D. consider additional financing to permit continuation of the program using similar materials and methods. The Government of the Malagasy Republic submitted a formal request on October 25, 1972.

7. **Ex-Im Bank Clearance**: Cleared on March 15, 1973.

8. **Country Team**: The Country Team strongly endorses the project.

9. **Statutory Criteria**: Have been met, see Annex I for details.

10. **Issues**: None.

11. **Recommendation**: A loan to the P & T in an amount not to exceed $1.2 million on the following basis:

    (a) To the P & T

Maturity	:	20 years, including a 5-year grace period
Interest	:	3½% throughout
Repayment	:	To the GOMR in Malagasy francs.

    (b) The GOMR will repay the U.S. under the following terms

Maturity	:	40 years, including a 10-year grace period
Interest	:	2% per annum for the first 10 years, 3% per annum thereafter.
Repayment	:	To the U.S. in dollars

Capital Assistance Committee:

	REDSO/EA	AID/W
Capital Development Officer:	J. Westley;	G. Thompson
Counsel :	R. Meighan;	C. Goldstein
Engineer :		A. Hotvedt
Desk Officer:		B. Bahl

AID-DLC/P-1090
May 25, 1973

I. INTRODUCTION

A. Background

In February 1967, A.I.D. authorized a $2.0 million loan for the modernization and expansion of the telecommunications system in the central and northern regions of Madagascar. A loan agreement was signed on June 30th of that year. Final disbursement was made in September 1970, although construction has not yet been completed due to service interruptions in 1971 and 1972 caused by extensive cyclone damage to P & T lines which required immediate repair.

In October 1972, a Delegation of the newly installed Government of the Malagasy Republic visited the Agency for International Development in Washington. They outlined the plans of the new Government for economic and social development and presented a number of proposals for A.I.D. consideration. A follow on to the original telecommunications loan was included among the proposals, and we agreed A.I.D. could reasonably consider additional assistance in the telecommunications area.

The discussions were followed by receipt of a written expression of interest from the Government of the Malagasy Republic. A.I.D. responded by sending a team to Malagasy Republic in February 1973, to review feasibility of the proposed project. The team concurred in the merit of the proposed project and submitted a draft of the Capital Assistance Paper. Additional financial information was obtained in March 1973, by the Regional Economic Development Services Office in Nairobi. The project was reviewed in Washington in March and approved for submission to the Development Finance Review Committee.

B. Relationship of the Project to A.I.D. Assistance

This project was developed under the A.I.D. policy to assist the legitimate aspirations for economic development of the newly independent African states. It is part of the program of the GOMR to provide the infrastructure necessary to advance priority economic development programs and to integrate the diverse areas of the nation.

The Malagasy Republic is not a country in which the United States has a special interest other than to promote development whenever and however appropriate. We feel that France and the European Economic Community (E.E.C.) should continue to be the primary sources of development assistance for the country. However, to ease Malagasy dependence on sole source of assistance and to express our interest in Malagasy development, limited United States assistance to small, easily administered, and economically justifiable projects is considered appropriate - especially in view of the new Government's popularly supported efforts to strike a posture of greater independence of the metropole.

A.I.D. financing under the project will finance American manufactured steel channel for use as poles, copper clad steel core conductors, and installation hardware similar to those provided under the previous loan. Because of their successful experience with U.S. material provided under the first loan we expect the P & T will continue to purchase replacement material of U.S. manufacture in the future.

C. Borrower

The Borrower will be the Direction Generale des Postes and Telecommunications. The borrower will agree to repay the GOMR and the GOMR will agree to repay the U.S. at the terms noted in the summary and recommendations section of the CAP.

The P & T is a semi-independent entity under the Ministere de l'Amenagement du Territoire (Minister of Territorial Planning) operating under a separate budget with authority to retain revenues. The management and operations of the P & T are discussed further in Section II. D. below.

D. Export-Import Bank Clearances

The Export-Import Bank Board of Directors reviewed the proposed loan on March 15, 1973. The Board concluded that the project was inappropriate for Export-Import Bank financing.

II. Technical Analysis

A. Project Description

The proposed project consists of the supply and installation of materials for the construction and rehabilitation of main telephone trunk lines, and provincial and local links to these lines in the south ans western rural regions of the Malagasy Republic. The A.I.D. loan will supply steel channel for use as poles, conductors (wire), and installation hardware for the project similar to those provided under Loan 687-H-002, the progress of which is reported in Annex IV. All such materials will be of U.S. source and origin. The Borrower will contribute all labor, construction tools, vehicles, and materials, such as tar and cement, required to complete the installation. In addition, the Borrower has undertaken to finance, partly from its own resources and partly from Japanese loan funds, the supply and materials to further expand the inter-urban telephone system. Under the A.I.D. program approximately 712 miles (1148 kms) of new lines will be installed and 17 miles (28 kms) of circuits added to existing pole lines over a period of three years. See Annex II for maps showing existing lines and the proposed improvements.

B. Present Telecommunications System

The existing system consists primarily of urban telephone exchanges linked by a trunk network. There is a Zone Exchange of Tananarive; five Repeater Exchanges at Tamatave, Diego Suarez, Majunga, Fianarantsoa, and Tulear; and 18 Group Exchanges. The linking network consists of short wave radio circuits, one tropo scatter link and overhead open wire lines with carrier circuits. The total length of overhead trunk lines as of the end of 1971 was:

Single wire telephone circuits 1,652 miles (2,665 km)
Two wire telephone circuits 11,737 miles (18,932 km)

Thirteen new automatic exchanges are in the process of completion and are scheduled for cutover in July 1973. The equipment is French and provides for nine exchanges of 400 lines, two exchanges of 800 lines and two exchanges of 200 lines.

C. Proposed System Expansion

The P & T plans to rehabilitate and expand the telecommunications system over the next twenty years which will (1) ensure the progressive automation of telephone and telegraph exchanges, (2) improve the quality of interurban communications by installing systems offering reliability of operation with a large number of channels which meet international (CCITT) circuit standards, (3) expand the automatic inter connection of exchanges, (4) provide telephone service to areas not now served, and (5) install public telephone booths.

For the period 1973-1975, the P & T plans the completion of the construction and rehabilitation of the telephone lines of the first A.I.D. loan and the initiation and completion of the construction and rehabilitation of the telephone lines of the proposed second A.I.D. loan. Also, during the period 1973-1977, the installation of the partially Japanese financed microwave link Tananarive-Tamatave-Diego Suarez with service provided to the towns in-between should be completed. In 1978-1982 the P & T plans to install microwave or underground cable links Tananarive-Majunga and Tananarive-Finanarantsoa. During the overall 1973-1992 period automation of smaller exchanges serving 51 to 100 subscribers is contemplated. In 1983-1987 underground cable or microwave links Majunga-Tulear and Majunga-Diego Suarez is planned; and in 1988-1992, the Fianarantsoa-Fort Dauphin microwave circuit is proposed.

D. Organization and Management

The Post and Telecommunications, (P & T) of the Malagasy Republic is an operation under the jurisdiction of the Cabinet Minister of Territorial Planning. (Organization Chart-Annex III). The P & T is headed by a Director who is responsible for the operation of four Departments and also directs the supervisors of Provincial operations.

The four Departments are:

1. General Administration
2. Postal Service and Finance
3. Telecommunications and Techniques
4. Inspection

The supervisors of Provincial operations control the Post and Telecommunications operations in the provinces.

The Department of Telecommunications and Techniques is comprised of four Divisions. They are: (1) Wire Technique, (2) Radio Technique, (3) Telecommunications Operations and (4) Telecommunication Studies. The Wire Technique Division will be the implementing organization for the proposed loan. They have repairshops, laboratories and maintenance teams at 15 Telecommunications Maintenance Centers and at mixed offices (both postal operations and telecommunications). In addition, they have construction teams for the outside plant work such as that contemplated in the proposed loan. At the present time, there are eight teams. Of these, one team is occupied with wire and material recovery and salvage. Another team is performing inspection duties.

A construction team consists of 10 to 12 men. It is composed of:

1 Team Leader
1 Assistant Team Leader
3-4 Linesmen
5-6 Laborers

A construction team can complete 100 km (62 miles) a year working 11 months with one month scheduled for vacation.

E. Project Implementation

1. Construction Schedule:

The construction schedule for the 712 miles of new lines and the 17 miles of added circuits is as follows:

Year
1. 241 miles new lines plus 12 miles added circuits
2. 248 miles new lines
3. 223 miles new lines plus 5 miles added circuits.

The schedule is determined by the availability of manpower and equipment as described in Section II. F below. Material deliveries, copper conductors, steel and other hardware will be requested for delivery at the supplier's earliest capability with minimum deliveries set to meet the construction schedule. The deliveries will be divided between the ports of Majunga and Fort Dauphin. From the warehouses in those two ports, the equipment will be forwarded to the work locations by road and small boats. (See Section VI A for implementation schedule).

2. Materials:

Material specifications have been adapted to U.S. standards for steel, copper-clad steel conductors, and hardware to permit procurement of standard U.S. materials. Materials to be used are similar to those already obtained under the first telecommunications loan. Material quantities to meet construction schedules are:

Year	No. of Poles	Metric Tons	Conductors Metric Tons
1	4912	327.4	52.1
2	5723	416.5	58.9
3	4816	318.7	45.3

Steel poles will be of two lengths (6 meters and 7 meters) and the 6 meter poles will be of two weights (heavy and light) depending on the number of circuits carried on them. Conductor sizes will be 2.64 mm and 2.91 mm, both of which are standard U.S. telephone conductor sizes. Details of pole and conductor sizes broken into years are given in Annex VI.

Hardware to be supplied as part of the project will include insulator ties, conductor splicing sleeves, guy wire and anchors, and special splicing tools.

The GOMR will supply construction tools and equipment, and local materials such as tar and cement, and paint from local stores. The project financing includes an adequate sum for material inspection service and any required procurement assistance.

F. Ability of the Borrower to implement the Project

1. Engineering:

The design effort which served as a basis for this project was performed by Postes and Telecommunications Service Engineers. Further detailed line design will be performed by the same headquarters engineers in Tananarive.

The design was found by the A.I.D. Project Engineer to be of a high standard and his further review of the engineering facilities and staff in Tananarive indicates that there should be no problem in carrying out the additional engineering details which will include line staking and the specification of pole top configurations.

2. Construction

The GOMR Post and Telecommunications Service will construct the lines with its own labor force. In February 1973, the Wire Technique Division employed eight line construction teams. Four teams are currently working on the implementation of the first telecommunications loan (see Annex IV). The other four teams will be assigned to the proposed project. The skilled workers are trained at the Ecole Nationale des Postes and Telecommunications. With construction planned at 62 miles per team per year, the four teams can complete 248 miles per year which is the approximate construction scheduled for this project as shown in Section II E-1. Consequently, the labor force appears to be adequate.

The crews are equipped with $3\frac{1}{2}$ or 5 ton line trucks which were observed to be in good operating condition and are regularly serviced and maintained in the P & T workshops and garages.

3. Maintenance

The existing system of 13,390 line miles is maintained by a staff of 448. The system is divided into 23 sections and each section is sub-divided into line sections of 19-30 miles for foot patrol or 90-120 miles for patrol by motor vehicle. A regular fort-nightly maintenance schedule is maintained for all lines. The additional construction on this project will not impose any extra load on the maintenance force since the project is reconstruction of existing sub-standard lines. These will not add new patrolling and will reduce some of the present maintenance load. There should, therefore, be no incremental operation and maintenance costs associated with this project. Total O & M costs are expected to amount to about $120,000 per year, with small increases in yearly operating costs. (See Section IV C).

G. Technical Soundness

The project provides for the removal of old single-wire and old two wire lines in the Western and Southern rural areas of the country and their replacement with open wire lines designed for the application of carrier-current. Carrier-current consists of medium frequency radio waves which are superimposed on the physical wire pairs of open-wire and travel along these wires. This permit as many as 60 circuits to be carried on one pair of wires, thus allowing phased expansion of circuits on wire lines over a considerable time-period through the addition of simple and low-cost channel equipment at the line terminals.

The line design and material cost estimates were prepared by the P & T of GOMR on the basis of international (CCITT) standards for open wire carrier circuits. The local cost component of line construction amounts to about 20% of the project costs and covers the complete cost of construction by local skilled and unskilled labor and local materials such as fuel, lubricants, tar and cement.

The A.I.D. project engineer has reviewed the engineering design, checked material quantities, and obtained price comparisons from U.S. material suppliers and shipping costs from a U.S. shipping firm.

The estimated project costs appear reasonable and reliable. The project is properly engineered to provide for the system requirements for a period of at least twenty years and to allow for indefinite expansion beyond that time or until traffic increases warrant the replacement of open wire lines by higher capacity circuits.

Based on the above analysis, we conclude that the degree of engineering planning and cost estimates required by Section 611 (a) of the Foreign Assistance Act of 1961 as amended have been met.

III. Economic Analysis

A. Economic Impact of Proposed Project

The Malagasy Republic comprises Madagascar and several smaller islands in the Indian Ocean about 250 miles east of the African mainland. Madagascar has an area somewhat larger than that of Texas, and a population of about 7 million. The high central plateau and the eastern coastal areas of the island are heavily populated, and are showing signs of overcrowding. The northern, western and southern parts of the country are sparsely settled, for the most part, and a major goal of government policy is the more rapid development of these areas to induce a redistribution of population away from Tananarive (the capital city) and other crowded sections in the center and east.

Rural development and irrigation projects are now underway in Malagasy's western and southern regions. One such project, for example, may encourage resettlement of 10,000 people in an area now largely undeveloped due to lack of reliable water for agriculture. This is the IDA assisted project which is mentioned in the detailed discussion below.

The Malagasy Republic's Gross Domestic Product grew at about 5% per annum in real terms during the 1960s; per capita GDP in 1971 reached about $130, although annual per capita income in the rural areas was about $80. Agriculture employs over 80% of the population, accounting for about 35% of GDB and 20% of monetized income. The main products for local consumption are rice, manioc, and meat, while the main export products are coffee, cloves, vanilla and animal products. Agriculture products accounted for about 70% of exports in 1971. Other major exports are graphite and chromite.

The Malagasy Republic's first Five Year Plan ended in 1968. It was followed by the preparation of an interim plan for 1969-1970 and the formulation of a new plan which was to begin in 1972. As a result of the change in governments in May 1972, however, the official adoption of the Second Five Year Plan has been delayed. Nevertheless, the present government is following the main outlines of the development strategy formulated for the plan, which include: (a) self-sufficiency in rice; (b) diversification of exports through stimulation of new exports (livestock, cotton, forest products) and the expansion of mining; and (c) improvement in transport, particularly roads and ports. As noted above, regional development is also a major objective of the present development strategy. The country has been able to increase the proportion of GDP devoted to investment from 12% in 1966 to 14.3% in 1970. This encouraging trend is expected to continue.

The proposed improvements in telephone services over four major links in southern and western Madagascar will contribute toward the achievement of the country's development goals within the context of regional development. At present telephone service in the areas in question is poor and is often interrupted for long periods. Most of the circuits are inadequate to handle present traffic, much less any increases in traffic. Many of the facilities were built in the 1920s and have not been improved since then. Maintenance costs are exceptionally high due to frequent wire breaks and other line failures. Improved telephone government services, and can help to increase the efficiency and utilization of transport, thus reducing transport costs. Improved telecommunications can also play an important part in promoting and integrating trade, especially trade in bulk commodities (such as grains) characterized by low margins of profit and the necessity for quick decisions. These benefits of improved telecommunications are even greater in the southern and western areas of the Malagasy Republic because most communities are not served by all-weather roads, and can be thus isolated from other communities for much of the year.

The areas served by each of the four links are described briefly below (see Map, Annex II):

Morovoay-Maintirano

The project provides for the replacement of 175 miles of existing lines and poles plus the addition of 12 miles of circuits to existing lines. This line links the sub-district capitals of Maintirano, Besalampy, Soalala and Mitsinjo with the main Majunga-Tananarive line at Morovoay. This line is particularly important during the rainy season, since most goods are transported from the major port at Majunga (population 43,000) to smaller west coast such as Maintirano. Mitsinjo is a sugar-producing area and Besalampy is a significant rice-producing area.

Antsalova-Belo-sur Tsiribihina

The project includes the replacement of 137 miles of existing lines and poles on this section. This will complete the improvement of the Majunga-Morondara link, since the Maintirano-Autsalove and Belo-sur Tsiribihina-Morondava sections have already been improved. Morondava (population 10,000) is a major port and the site of an irrigation and rural development project which is being assisted with a $15.3 million IDA credit. The Antsalova-Belo sur Tsiribihina section will also bring improved service to the intermediate communities of Masoarivo and Bekopaka, which have important reserves of timber.

Manantenina-Vangaindrano

The project provides for the replacement of 90 miles of existing lines and poles as well as the addition of 5 miles of circuits to existing lines. This will permit the completion of an improved link between two major east coast ports, Ft. Dauphin (population 13,000) and Farafangana (population 11,000). There are several coffee plantations at Vangaindrano while Manantenina is the site of recently discovered bauxite deposits.

Ambondro-Amphanihy

The project provides for the replacement of 121 miles of line on this section. This will complete the improved link between Ft. Dauphin and Tulear (population 34,000), a provincial capital. The area between Ambondro and Amphanihy is a sorghum-producing area and includes Madagascar's mica mines.

B. Benefit-Cost Analysis

The types of economic benefits discussed above are very difficult, if not impossible, to quantify. Other benefits, such as employment-generation and improved equity, would be even more difficult to quantify, although the project should have a favorable impact on employment and equity through more rapid development of the relatively poor rural areas involved. Consequently, it is generally assumed in analyses of telecommunications projects that the prices paid by users for the service represent a fair minimum measure of the value of the economic benefits of the service. Since the present project involves the improvement of existing services for the most part, the benefits are the incremental revenues realized by the P & T as a result of investing in the system improvements and the estimated benefits of one time reconstruction as approved to piecemeal rehabilitation. With respect to revenues generated by the new lines, there will be fairly large growth rates at first due to the availability of uninterrupted telephone service.

The internal rate of return calculation (See Annex VII) shows the projects return at 12.4%. The incremental revenues rise rather rapidly since the existing line capacity is limited and will not be able to meet projected demand growth, even if it is replaced on a piecemeal basis over 20 years.

IV. Financial Analysis

A. Financial Plan

The total financing required for the project, including contingencies, is $1.5 million, of which $1.2 million represents foreign exchange costs and $0.3 million represents local costs. A.I.D. proposes to finance all of the foreign exchange costs and the P & T all the local costs, as follows (U.S. $): See Annex VI for details.

	Foreign Exchange Costs	Local Costs	Total
A.I.D. Loan	$1,200,000	-	$1,200,000
P & T Contribution	-	300,000	300,000
	$1,200,000	$300,000	$1,500,000

The proposed loan would be extended to the P & T. GOMR will guaranty the local cost project contributions of the P & T.

B. Ability of GMR to Repay the Loan

As of the end of 1970, the GOMR's external debt, including undisbursed amounts, was $138 million; of this amount, $15 million was privately held (bonds, supplier credits, debts of financial institutions), while $42 million was owed to international organizations and $81 million to bilateral donors, principally France. The GOMR's service payments on external debt in 1970 were $6.9 million, which was equivalent to less than 5% of 1970 commodity exports ($145 Million). This debt service ratio should grow relatively slowly due to the high proportion of GOMR debt contracted on concessional terms. Consequently, the GOMR should have no difficulty in repaying the proposed A.I.D. loan. At the same time, the IBRD has recommended that, in view of the country's poverty and the still limited prospects for its exports, the major proportion of external aid continue to be provided on concessional terms.

The GOMR has been able to show a surplus on its current accounts over the last ten years. In order to carry out its investment program it has had to turn to external donor financing for approximately one-third of its capital investment program. This ratio will continue in the near future with net borrowings averaging $15 to $22 million a year depending on the country's ability to absorb new capital. Evidently, the Malagasy Republic has been able to devote about 11% of its national product to capital formation. This percentage is slowly increasing and donors should continue concessional terms as the country gears itself up to a more efficient mobilization of resources.

C. Financial Position of the P & T

The P & T operates under a budget separate from the regular GOMR budget and is allowed to retain revenues for the purpose of financing investment as well as meeting operational expenses. In recent years P & T revenues have exceeded operational expenses by an amount averaging about $600,000; over the next five years (1973-77) the P & T projects revenues averaging $15 million, an operating surplus averaging $3 million, and year-end cash balances after anticipated debt service payments averaging $1.2 million. We consider this to be fairly conservative since revenues may already exceed $15 million. Over the 20-year repayment period for the loan from the GOMR to P & T, projected P & T year-end cash balances will range from a low of $300,000 to a high of $1.8 million, and will average about $800,000. Since service payments on the loan will average $100,000 per annum (following the grace period), it appears that the P & T's financial position will permit it to meet its obligations regarding the servicing of the second-step loan.

With respect to the operating and maintenance (O & M) costs of the links to be rehabilitated, the P & T expects no increase upon completion of the project other than normal increases due to higher salaries, etc. Based upon the costs of operating the present lines and providing adequate routine maintenance, P & T projects O & M costs for the new project lines of about $120,000 per annum, including operating costs of $100,000 and maintenance costs of $20,000 with operating costs increasing at about 4% due to normal salary increases. Based on these O & M costs, and the revenues projected in Annex VII, Details of Benefit-Cost Analysis, the operating results for the project over the 20-year project life is estimated as follows:

Malagasy Telecommunications Phase II (000 dollars)

	1975	1980	1985	1990	1995
Revenues	145	253	324	414	530
Expenses	120	141	165	200	245
Net	$ 25	$112	$159	$214	$285

Regarding the terms for onlending from the GOMR to the P & T, the GOMR has requested that the terms be the same as those under the railroad project (A.I.D. Loan 687-H-001) and the first telecommunications project (A.I.D. Loan 687-H-002) i.e., 20-year repayment period, including 5 years grace, and an interest rate of $3\frac{1}{2}\%$. The maturity and grace period are clearly reasonable, inasmuch as they are based on the assumed project life of 20 years and the time required before all the new facilities will be completed and can begin to produce a return on investment. With respect to the interest rate, however, it has been A.I.D. policy to require that loans to revenue-producing enterprises bear interest at the rate generally applicable to loans of comparable nature and term in the host country; as a general rule the rate should be at least 6%. In this case, an interest rate of 6% rather than $3\frac{1}{2}\%$ would increase the debt servicing cost to the P & T by about $30,000 in the initial years. While P & T could probably bear this additional cost, it would further limit P & T's flexibility and could impose a strain on P & T finances if operating surpluses fall below expectations (as happened in 1972 when three cyclones damaged or destroyed hundreds of miles of poles and line). Moreover, the P & T's major donors (France and Japan) have heretofore provided loans at interest rates no higher than 4%. P & T is concerned that A.I.D. insistence on a higher interest rate would lead the other donors to do likewise, with a consequent major impact on P & T's financial position. For these reasons, and in view of the precedent created by the first two A.I.D. loans to the Malagasy Republic, A.I.D. has decided in this case to agree to the GOMR request for a $3\frac{1}{2}\%$ interest rate on the onlending of the loan proceeds to the P & T.

D. Availability of Other Sources of Finance

The P & T has borrowed funds from France and Japan for the expansion of its system. The GOMR has borrowed substantial amounts over the past years from the FED, FAC, the Caisse Centrale and West Germany. In 1971, for instance, FED provided $12.6 million and the Caisse Centrale $4.6 million to the GOMR. A.I.D. considered the fact that the GOMR had long-standing relationships with other donors, but agreed with its wishes to spread its sources of donor financing. (See Section I).

V. Other Considerations

A. Impact on the U.S. Economy and Balance of Payments

This loan will not conflict with any U.S. business or economic interests, and will have a favorable impact on the U.S. balance of payments as the loan is repaid. The loan may also lead to small commercial purchases of replacement items from the U.S. due to the standardization on U.S. materials on nearly 3000 miles of telephone lines. We expect that the loan proceeds will be spent in the U.S.

B. Effect on Private Enterprise

Private enterprise will benefit from the loan in the U.S. and in the Malagasy Republic. Improved telephone service will primarily benefit the private sector in the Malagasy Republic, since private users account for about two-thirds of telephone revenues.

C. Impact on the Environment

There will be no significant environmental impact as a result of this project except for 90 miles out of 712 miles of line since it involves the replacement and rehabilitation of existing pole lines and conductors. Poles consist of steel channels of 6 and 7 meter heights and cross sections of no more than 3-4 inches. With one or two cross-arms at the top of these poles their visibility from roadways is extremely low. The 90 miles of new line are not constructed in wooded areas and will, therefore, not require the cutting of trees.

VI. Implementation

A. Procurement and Installation Schedule

Following execution of the Loan Agreement, the P & T will enter into a contract with the Affo-American Purchasing Center (AAPC) for the procurement of the U.S. materials required for the project. AAPC will prepare the necessary bid documents and will carry out the bidding under procedures acceptable to A.I.D. AAPC will also make arrangements for inspection of the materials and shipment to the Malagasy Republic. The materials will be stored in warehouses at the ports of Majunga (western region) and For Dauphin (southern region) until ready for installation. Based on Section II.E above, the anticipated schedule for procurement and installation is as follows:

Authorization of Loan	June 1973
Execution of Loan Agreement	August 1973
Execution of Contract for Procurement Services	September 1973
Issuance of Bid Documents	November 1973
Awards for Materials	February 1974
Initial Shipment of Materials	June 1974
Initial Arrival of Materials in Malagasy Republic	August 1974
Beginning Installations	September 1974
Completion of Installation (253 miles)	September 1975
Completion of Installation (248 miles)	September 1976
Completion of Installation (228 miles)	September 1977

B. Disbursement Schedule

The loan proceeds will be disbursed to U.S. suppliers against Letters of Credit at the time of shipment of the required materials. Based on the above schedule the entire amount of the loan (less contingencies) will be drawn down by the end of FY-1974.

VII. Issues

None.

CHECKLIST OF STATUTORY CRITERIA
DEVELOPMENT LOAN FUND

Many of the questions require only yes or no answers. Others, however, must be answered more fully. In those cases, a specific reference to explicit discussion of the matter in the loan paper will suffice. But where the loan paper does not deal explicitly with a matter that clearly requires more than a yes or no response, sufficient response must be made to indicate that the matter has been appropriately considered.

The following abbreviations are used in the checklist:

FAA - Foreign Assistance Act of 1961, as amended, incorporating amendments effected by the Foreign Assistance Act of 1971.

App. - Foreign Assistance and Related Agencies Appropriations Act, 1971.
MMA - Merchant Marine Act of 1936, as amended
Space for answers is provided in the margin to the right of each question. This form must be made a part of the Capital Assistance Paper.

I. COUNTRY PERFORMANCE

A. Progress Towards Country Goals

1. FAA §§201(b)(5), 201(b)(7), 201(b)(8), 208. *Discuss the extent to which the country is:*

(a) Making appropriate efforts to increase food production and improve means for food storage and distribution.

The GOMR's development strategy puts greatest stress on self-sufficiency in rice, diversification of exports through stimulation of new agricultural exports, and improvements in transport.

(b) Creating a favorable climate for foreign and domestic private enterprise and investment.

The present government of the Malagasy Republic has continued the GOMR's traditional policy of active encouragement of private enterprise and private investment domestic and foreign.

(c) Increasing the people's role in the developmental process.

The GOMR is attempting to involve people in isolated rural areas in the development process through improved transport and communications and an increased pace of agricultural modernization in areas hitherto characterized by subsistence.

(d) Allocating expenditures to development rather than to unnecessary military purposes or intervention in other free countries' affairs.

See I.D.2 below.

(e) Willing to contribute funds to the project or program.

The GOMR will contribute $300,000 to the project, and will contribute additional amounts for other activities related to the project.

(f) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangement; and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.

The present government of the Malagasy Republic has been in power only since May 1972. Since that time the government has encouraged freedom of the press, emphasized the rule of law and urged the Malagasy people to play a greater role in the private sector of the economy.

(g) Responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

The government has stated that while outside assistance is needed, the development of the country depends on the actions of the Malagasy people themselves.

B. *Relations with the United States*

1. *FAA §620(c). Is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, including arbitration, or (b) the debt is not denied or contested by the government, or (c) the indebtedness arises under such government's, or a predecessor's unconditional guarantee?*	No such indebtedness is known to exist.
2. *FAA §620(d). If the loan is intended for construction or operation of any productive enterprise that will compete with U.S. enterprise, has the country agreed that it will establish appropriate procedures to prevent export to the U.S. of more than 20% of its enterprise's annual production during the life of the loan?*	Not applicable.

3. *FAA §620(e)(1). Has the country's government, or any agency or subdivision thereof, (a) nationalized or expropriated property owned by U.S. citizens or by any business entity not less than 50% beneficially owned by U.S. citizens, (b) taken steps to repudiate or nullify existing contracts or agreements with such citizens or entity, or (c) imposed or enforced discriminatory taxes or other exactions, or restrictive maintenance or operation conditions? If so, and more than six months has elapsed since such occurrence, identify the document indicating that the government, or appropriate agency or subdivision thereof, has taken appropriate steps to discharge its obligations under international law toward such citizen or entity? If less than six months has elapsed, what steps if any has it taken to discharge its obligations?*	No to first question; second question not applicable.
4. *FAA §620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property, and failed to take appropriate measures to prevent a recurrence and to provide adequate compensation for such damage or destruction?*	No.

5. *FAA §620(l). Has the government instituted an investment guaranty program under FAA §221(b)(1) for the specific risks of inconvertibility and expropriation or confiscation?*	Yes.
6. *FAA §620(o): Fisherman's Protective Act of 1954, as amended, Section 5. Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel on account of its fishing activities in international waters? If, as a result of a seizure, the U.S.G. has made reimbursement under the provisions of the Fisherman's Protective Act and such amount has not been paid in full by the seizing country, identify the documentation which describes how the withholding of assistance under the FAA has been or will be accomplished.*	No.
7. *FAA §620(q). Has the country been in default, during a period in excess of six months, in payment to the U.S. on any FAA loan?*	No.
8. *FAA §620(t). Have diplomatic relations between the country and the U.S. been severed? If so, have they been renewed?*	No to the first question; second question not applicable.

C. Relations with Other Nations and the U.N.

1. *FAA §620(i). Has the country been officially represented at any international conference when that representation included planning activities involving insurrection or subversion directed against the U.S. or countries receiving U.S. assistance?*	No, as far as known
2. *FAA §§620(a), 620(n); Has the country sold, furnished, or permitted ships or aircraft under its registry to carry to Cuba or North Viet-Nam items of economic, military, or other assistance?*	No, as far as known.
3. *FAA §620(u); App. §108 What is the status of the country's U.N. dues, assessments, or other obligations? Does the loan agreement bar any use of funds to pay U.N. assessments, dues, or arrearages?*	The Malagasy Republic is not in arrears in its obligations to the UN. The loan agreement will restrict the loan funds to the project.

D. Military Situation

1. *FAA §620(i). Has the country engaged in or prepared for aggressive military efforts directed against the U.S. or countries receiving U.S. assistance?*	No, as far as known

2. *FAA §620(s). What is (a) the percentage of the country's budget devoted to military purposes, and (b) the amount of the country's foreign exchange resources used to acquire military equipment? Is the country diverting U.S. development assistance or P.L. 480 sales to military expenditures? Is the country diverting its own resources to unnecessary military expenditures? (Findings on these questions are to be made for each country at least once each fiscal year and, in addition, as often as may be required by a material change in relevant circumstances.)* Has the country spent money for sophisticated weapons?

Military Situation

In recent years the Malagasy Republic has devoted approximately 8% of the annual budget to military purposes. While the exact amount of foreign exchange used to acquire military equipment is not known. it is estimated that the total amount is small since France has traditionally supplied the Malagasy forces with defense equipment. The Malagasy Republic does not possess any sophisticated weapons.

II. CONDITION OF THE LOAN

A. General Soundness

-- *Interest and Repayment*

1. FAA §§201(d), 201(b)(2). Is the rate of interest excessive or unreasonable for the borrower? Are there reasonable prospects for repayment? What is the grace period interest rate; the following period interest rate? Is the rate of interest higher than the country's applicable legal rate of interest?

The loan terms are reasonable for both the GOMR Borrower and the P&T as implementing agency. There are reasonable prospects for repayment. The grace period interest rate is 2%; the interest rate for the following period is 3%. The relending interest rate is 3½%. The answer to the last question is no.

-- *Financing*

1. FAA §201(b)(1). To what extent can financing on reasonable terms be obtained from other free-world sources, including private sources within the U.S.?

Concessional financing for purpose of this loan not available from other free world sources, as far as known. Need for concessional terms precludes consideration of loan by other U.S. official or private sources.

-- *Economic and Technical Soundness*

1. FAA §§201(b)(2), 201(e). The activity's economic and technical soundness to undertake loan; does the loan application, together with information and assurances, indicate that funds will be used in an economically and technically sound manner?

Yes; See Sections II and III of the Capital Assistance Paper (CAP).

2. *<u>FAA §611(a)(1)</u>. Have engineering, financial, and other plans necessary to carry out assistance, and a reasonably firm estimate of the cost of assistance to the U.S., been completed?*

The necessary engineering and financial planning for the project has been completed (see Sections II, III, and IV of the CAP) and reasonably firm cost estimates have been obtained (see Annex VI).

3. *<u>FAA §611(b); App. §101</u>. If the loan or grant is for a water or related land-resource construction project or program, do plans include a cost-benefit computation? Does the project or program meet the relevant U.S. construction standards and criteria used in determining feasibility?*

Not applicable.

4. *<u>FAA §611(e)</u>. If this is a Capital Assistance Project with U.S. financing in excess of $1 million, has the principal A.I.D. officer in the country certified as to the country's capability effectively to maintain and utilize the project?*

Yes, the Ambassador has so certified; see Annex XI, 611(e) certification.

B. <u>Relation to Achievement of Country and Regional Goals</u>

Country Goals

1. *<u>FAA §§207, 281(a)</u>. Describe this loan's relation to:*

a. *Institutions needed for a democratic society and to assure maximum participation on the part of the people in the task of economic development.*

The project will be implemented by the P&T; the process of implementation should help strengthen that institution's administrative and technical capabilities. The improved communications made possible by the loan should result in better service for people in the southern and western parts of the country and should contribute to greater participation in economic development in these areas.

b. Enabling the country to meet its food needs, both from its own resources and through development, with U.S. help, of infrastructure to support increased agricultural productivity.	Improved telephone service in the rural Malagasy Republic will facilitate agricultural marketing and thus help support increased agricultural productivity.
c. Meeting increasing need for trained manpower.	Not applicable.
d. Developing programs to meet public health needs.	Not applicable.
e. Assisting other important economic, political, and social development activities, including industrial development; growth of free labor unions; cooperatives and voluntary agencies; improvement of transportation and communication systems; capabilities for planning and public administration; urban development; and modernization of existing laws.	The loan will assist in the improvement of the Malagasy Republic's telecommunications system.
2. FAA §201(b)(4). Describe the activity's consistency with and relationship to other development activities, and its contribution to realizable long-range objectives.	The project supports other GOMR plans aimed at more rapid development of the less densely populated but productive areas in the western and southern areas of the country. For further discussion see Section III of the CAP.

3. __FAA §201(b)(9)__. How will the activity to be financed contribute to the achievement of self-sustaining growth?	See Section III of the CAP.
4. __FAA §201(f)__. If this is a project loan, describe how such project will promote the country's economic development, taking into account the country's human and material resource requirements and the relationship between ultimate objectives of the project and overall economic development.	See Section III of the CAP.
5. __FAA §201(b)(3)__. In what ways does the activity give reasonable promise of contributing to development of economic resources, or to increase of productive capacities?	See Section III of the CAP.
6. __FAA §281(b)__. How does the program under which assistance is provided recognize the particular needs, desires, and capacities of the country's people; utilize the country's intellectual resources to encourage institutional development; and support civic education and training in skills required for effective participation in political processes.	The loan will assist the GOMR improving one aspect of government services in two rural areas of the Malagasy Republic. Implementation of the project by the P&T's own forces should increase that institution's capabilities.

7. FAA §601(a). How will this loan encourage the country's efforts to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions?	The loan will encourage the Malagasy Republic's efforts with respect to (a), (b), (d) and (e) by providing better and more reliable communications Parts (c) and (f) not applicable.
8. FAA §202(a). Indicate the amount of money under the loan which is: going directly to private enterprise; going to intermediate credit institutions or other borrowers for use by private enterprise; being used to finance imports from private sources; or otherwise being used to finance procurements from private sources.	The entire amount of the loan will be used to finance procurement from private sources.
9. FAA §611(a)(2). What legislative action is required within the recipient country? What is the basis for a reasonable anticipation that such action will be completed in time to permit orderly accomplishment of purposes of loan?	No legislative action required.

-- *Regional Goals*

1. *FAA §619. If this loan is assisting a newly independent country, to what extent do the circumstances permit such assistance to be furnished through multilateral organizations or plans?*	Not applicable.
2. *FAA §209. If this loan is directed at a problem or an opportunity that is regional in nature, how does assistance under this loan encourage a regional development program? What multilateral assistance is presently being furnished to the country?*	First question not applicable. Major multilateral assistance is being furnished to to the Malagasy Republic by the IBRD, the European Development Fund, and the U.N.

C. Relation to U.S. Economy

-- *Employment, Balance of Payments, Private Enterprise*

1. *FAA §§201(b)(6); 102, Fifth. What are the possible effects of this loan on U.S. economy, with special reference to areas of substantial labor surplus? Describe the extent to which assistance is constituted of U.S. commodities and services, furnished in a manner consistent with improving the U.S. balance of payments position.*	There is no special applicability regarding labor surplus areas. See Section V of CAP for other questions.

2. FAA §§612(b), 636(h). *What steps have been taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. and local currencies contributed by the country are utilized to meet the cost of contractual and other services, and that U.S. foreign-owned currencies are utilized in lieu of dollars?*	The GMR is paying all of the project local costs.
3. FAA §601(d); App. §109. *If this loan is for a capital project, to what extent has the Agency encouraged utilization of engineering and professional services of U.S. firms and their affiliates? If the loan is to be used to finance direct costs for construction, will any of the contractors be persons other than qualified nationals of the country or qualified citizens of the U.S.? If so, has the required waiver been obtained?*	Not applicable.
4. FAA §608(a). *Provide information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.*	Excess property is not deemed appropriate for the project.
5. FAA §602. *What efforts have been made to assist U.S. small business to participate equitably in the furnishing of commodities and services financed by this loan?*	The Loan Agreement and Implementation Letter will include provisions for the equitable participation by U.S. small business in providing the goods and services financed by this loan.

6. FAA §621. *If the loan provides technical assistance, how is private enterprise on a contract basis utilized? If the facilities of other Federal agencies will be utilized, in what ways are they particularly suitable; are they competitive with private enterprise (if so, explain); and how can they be made available without undue interference with domestic programs?*	Not applicable.
7. FAA §611(c). *If this loan involves a contract for construction that obligates in excess of $100,000, will it be on a competitive basis? If not, are there factors which make it impracticable?*	Not applicable.

Procurement

1. FAA §604(a). *Will commodity procurement be restricted to U.S. except as otherwise determined by the President?*	Yes.
2. FAA §604(b). *Will any part of this loan be used for bulk commodity procurement at adjusted prices higher than the market price prevailing in the U.S. at time of purchase?*	No.

3. FAA §604(e). *Will any part of this loan be used for procurement of any agricultural commodity or product thereof outside the U.S. when the domestic price of such commodity is less than parity?*	No.

D. *Other Requirements*

1. FAA §201(b). *Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year?*	Yes.
2. App. §106. *Does the loan agreement provide, with respect to capital projects, for U.S. approval of contract terms and firms?*	The Loan Agreement will so provide.
3. FAA §620(k). *If the loan is for construction of a productive enterprise, with respect to which the aggregate value of assistance to be furnished will exceed $100 million, what preparation has been made to obtain the express approval of the Congress?*	Not applicable.

4. *<u>FAA §§620(b), 620(f)</u>: Has the President determined that the country is not dominated or controlled by the international Communist movement? If the country is a Communist country (including, but not limited to, the countries listed in FAA §620(f)) and the loan is intended for economic assistance, have the findings required by FAA §620(f) been made and reported to the Congress?*	The Malagasy Republic is not a communist or communist-dominated country. The Secretary of State so determined on October 11, 1961.
5. *<u>FAA §620(h)</u>. What steps have been taken to insure that the loan will not be used in a manner which, contrary to the best interest of the United States, promotes or assists the foreign aid projects of the Communist-bloc countries?*	The Loan Agreement will include the standard A.I.D. clause in this regard.
6. *<u>App. §110</u>. Will any funds be used to finance procurement of iron and steel products for use in Viet-Nam other than as contemplated by §110.*	No.
7. *<u>FAA §636(i)</u>. Will any part of this loan be used in financing non-U.S.-manufactured automobiles? If so, has the required waiver been obtained?*	No; second question not applicable.

8. FAA §§620(a)(1) and (2), 620(p): Will any assistance be furnished or funds made available to the government of Cuba or the United Arab Republic?	No.
9. FAA §620(g). Will any part of this loan be used to compensate owners for expropriated or nationalized property? If any assistance has been used for such purpose in the past, has appropriate reimbursement been made to the U.S. for sums diverted?	No; answer to second question is that none has been so used.
10. FAA §201(f). If this is a project loan, what provisions have been made for appropriate participation by the recipient country's private enterprise?	The project will be implemented by the P&T, which like telecommunications entities in most countries is a public enterprise. Thus participation by local private enterprise is not appropriate.
11. App. §104. Does the loan agreement bar any use of funds to pay pensions, etc., for persons who are serving or who have served in the recipient country's armed forces?	Yes; the loan Agreement limits the use of funds to the project.

12. MMA § 901.b. Does the loan agreement provide, for compliance with U.S. shipping requirements, that at least 50% of the gross tonnage of all commodities financed with funds made available under this loan (computed separately by geographic area for dry bulk carriers, dry cargo liners, and tankers) be transported on privately owned U.S.-flag commercial vessels to the extent such vessels are available at fair and reasonable rates for U.S. flag vessels. Does the loan agreement also provide for compliance with U.S. shipping requirements, that at least 50% of the gross freight revenues of goods shipped under this loan must be earned by privately owned U.S.-flag commercial vessels to the extent such vessels are available at fair and reasonable rates for U.S.-flag vessels? — Yes to both questions.

13. FAA. Section 481. Has the country failed to take adequate steps to prevent narcotic drugs from entering the U.S. unlawfully? — No.

14. FAA. Section 604.e. Has there been compliance with restriction against procuring with AID funds agricultural commodities outside the U.S. when the domestic price of such commodity is less than parity. — Yes.

ANNEX II

Map #1 TELEPHONE WIRE NETWORK

Network After Completion of the Initial Loan

Existing/lines
AID financed lines

Work contemplated under the second loan - - - - - -

Map #2 DETAILS OF NEW CONNECTIONS TO BE CONSTRUCTED

a. MAROVOAY - MAINTIRANO
b. ANTSALOVA - BELO-SUR-TSIRIBIHINA

Lines to be constructed

Map #3 DETAILS OF NEW CONNECTIONS TO BE CONSTRUCTED

a. AMBONDRO - AMPANIHY
b. MANATENINA - VANGAINDRANO

Lines to be constructed

MAP #1

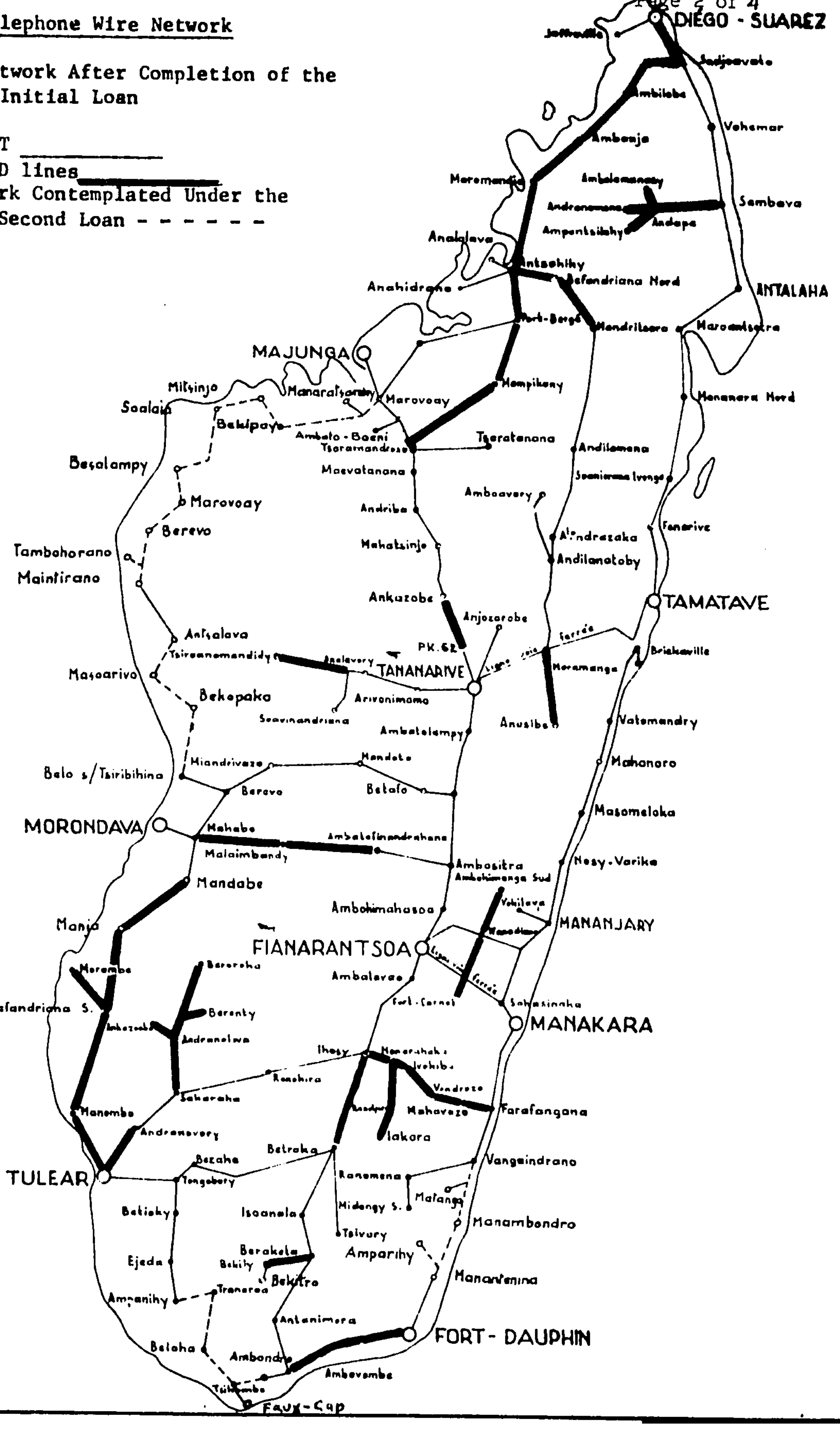
Telephone Wire Network

Network After Completion of the
Initial Loan

PTT ___________

AID lines___________

Work Contemplated Under the
Second Loan - - - - - -



ANNEX II
Page 3 of 4

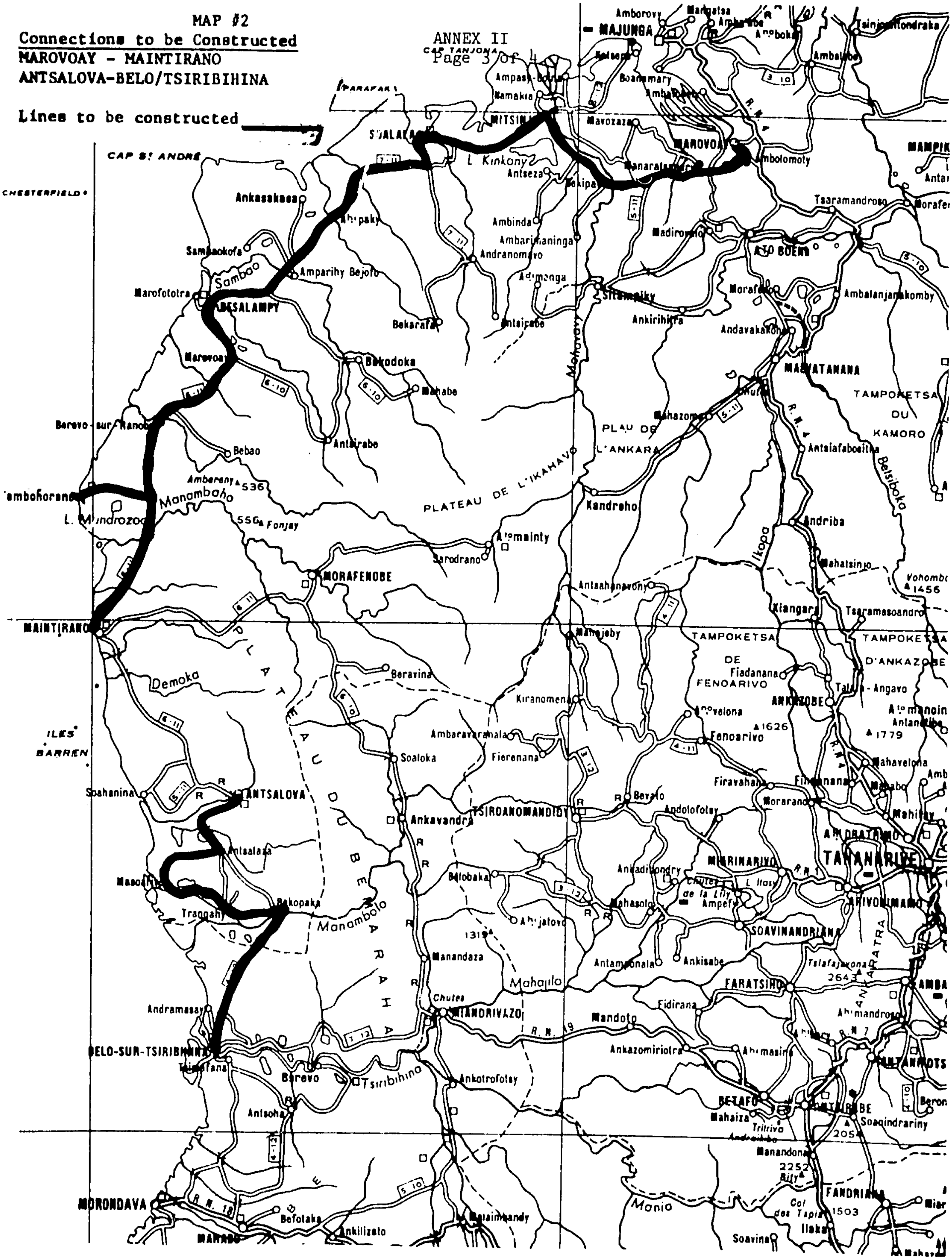
MAP #2

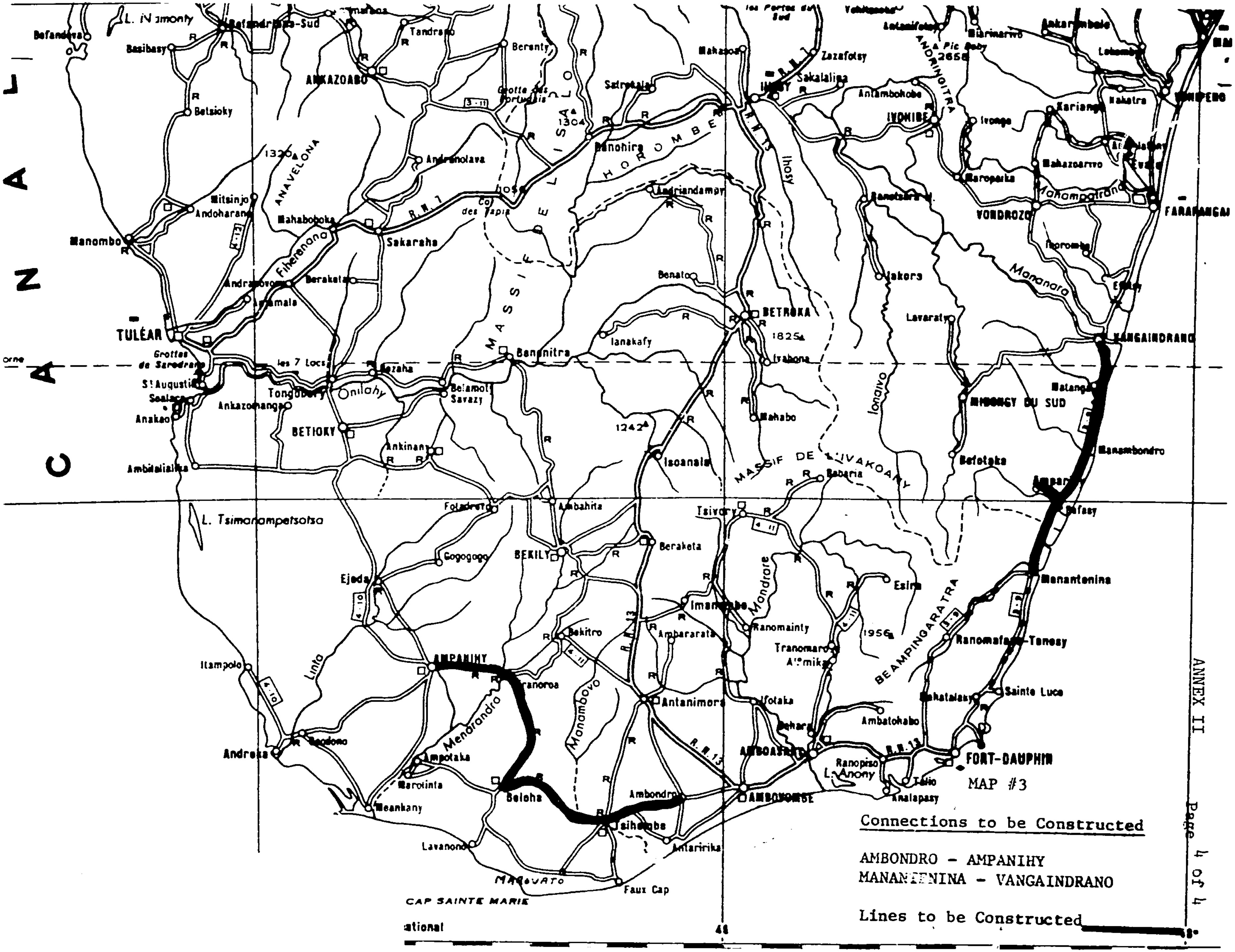
Connections to be Constructed

MAROVOAY - MAINTIRANO

ANTSALOVA-BELO/TSIRIBIHINA

Lines to be constructed



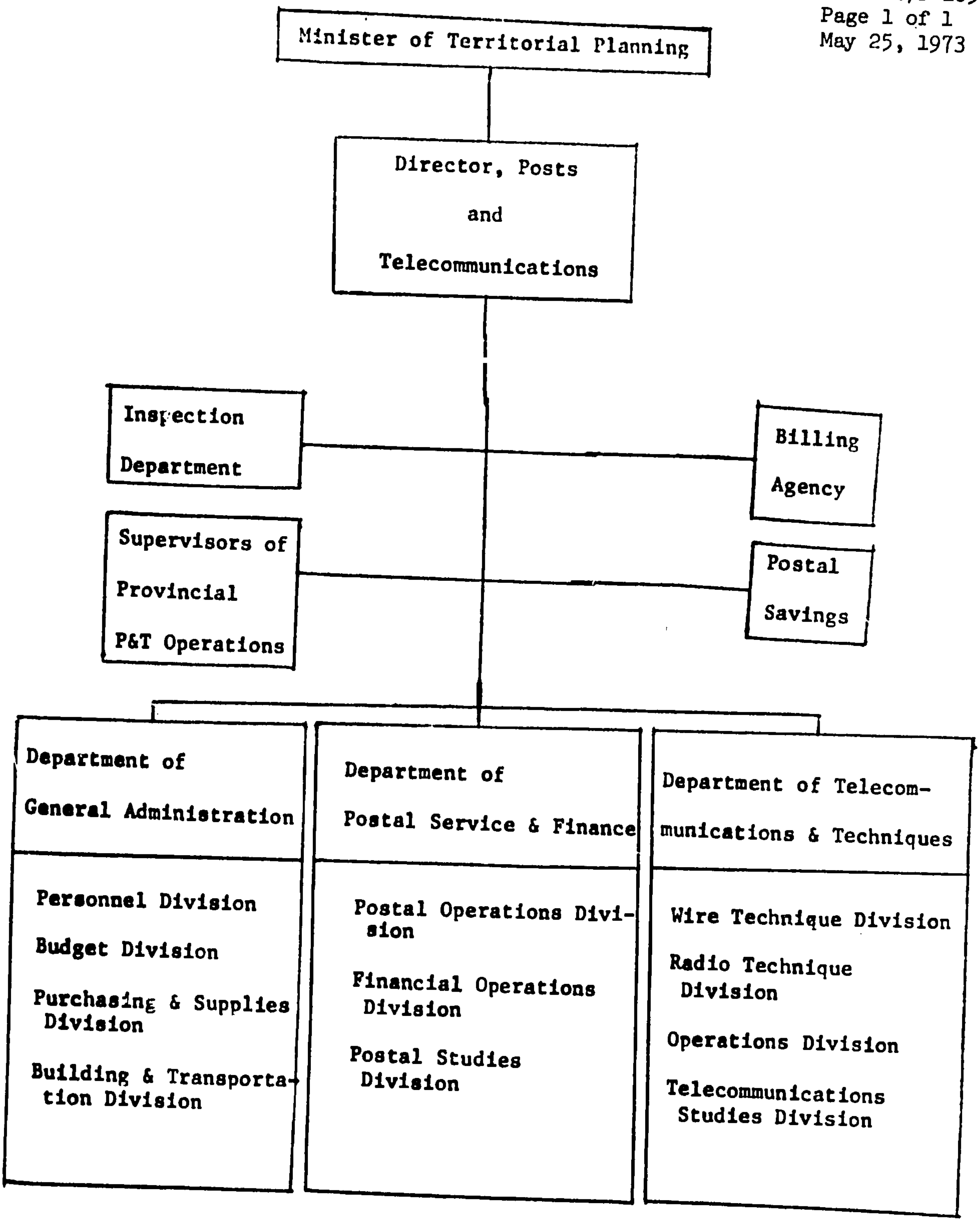


MAP #3

Connections to be Constructed

AMBONDRO - AMPANIHY
MANANTENINA - VANGAINDRANO

Lines to be Constructed



ORGANIZATION CHART POSTS & TELECOMMUNICATIONS - GOMR

Evaluation of Previous Project

An A.I.D. Telecommunications Improvement Loan of $2 million to the P & T was authorized on June 30, 1967 (A.I.D. Loan No. 687-H-002). The project consists of the construction and rehabilitation of 1,970 miles of new inter-urban telephone trunk circuits and the addition of 187 miles of circuits to existing pole lines over a period of four years. The A.I.D. loan provided for poles, conductors (wire) and the installation materials and the services related to the acquisition and transport of the commodities. The P & T provided $1.0 million of local costs needed to complete this project.

As of December 31, 1972, loan disbursements were complete. All of the commodities for the project have been delivered and are in the warehouses serving the various regions or have been installed in the various trunk lines.

The status of the project as of February 1973 is 63% construction completed with full completion scheduled over the next three years as follows:

1973	248 miles of new lines
1974	248 miles of new lines
1975	226 miles of new lines

Work is currently underway on this project in the provinces of Diego-Suarez, Majunga, Fianarantsoa, and Tulear and is in agreement with the above-mentioned schedule.

The project has had some revisions and delays. Revision include the substitution of a microwave system Tananarive-Tamatave-Diego Suarez. Updated traffic projections showed that the originally established 1965 requirements would not meet the current and proposed traffic. Consequently, the installation of the A.I.D. financed carrier-current open-wire links in this sector would be inappropriate since they would reach capacity in a few years and additions would have to be made. The new microwave link is to be jointly financed by the GOMR with the Government of Japan. The GOMR requested permission to utilize the materials originally scheduled for the section to be applied to other links in the country requiring rehabilitation and improvement (Letter: PTT to A.I.D. December 21, 1970). A.I.D./W agreed to the changes with the condition that materials required in excess of those provided for the initial link will be financed from GOMR funds. (Letter, A.I.D. to Director General of Posts & Telecommunications GOMR January 26, 1971).

Delays have been encountered due to road construction projects financed in part by the Federal Republic of Germany and the World Bank. These road projects were given priority and the construction necessary for the telecommunications lines in the road areas required rescheduling.

Road and telephone construction could not take place simultaneously without loss of efficiency and added expense to the P & T. If the telephone lines had been installed prior to the road construction, it would have been necessary to relocate them. The entire 226 miles of lines scheduled for completion in 1975 and 39 miles of lines scheduled for completion in 1974 were delayed by the road construction projects. As noted in the main section of this CAP, other delays resulted from the disruption of services caused by cyclones in 1971 and 1972. Four of the P & T telephone construction teams currently at work will be able to complete the overall project in the scheduled time frame as proposed above while four other teams can begin work on the new project when materials arrive. All eight teams will be available for work on the new project by the time all the material is received since delivery time ranges from 9-12 months from date of contract award. The P & T have stated that sufficient materials are on hand and completion will result in a minimum balance of spare parts.

It is recommended that a site inspection be made at an appropriate time to verify the progress and schedule of the project.

DETAILED PROJECT DESCRIPTION

A. Project Sections

The 712 miles of new lines and the 17 miles of circuits added to existing pole lines over a period of three years are planned for the following sections in the west and south of the Malagasy Republic. (Maps - Annex II).

Section Morovoay-Maintirano

Construction of 175 miles of new lines plus 12 miles of added circuits.

Section Antsalova-Belo-Sur-Tsiribihina

Reconstruction of 137 miles of new lines.

Section Manantenina-Vangamdrano

Reconstruction of 90 miles of new lines plus 5 miles of added circuits.

Section Ambondro-Amphanihy West

Reconstruction of 121 miles of new lines.

B. Schedule of Work - Miles of Line

	First Year	Second Year	Third ear
Ambondo-Tsihombe	23	-	-
Tsihombe-Beloha	-	34	-
Beloha-Ampanihy West	-	-	63
Antsalova-Belos/Tsiribihina	100	17	21
Marovoay-Soalala	118	-	-
+ Manaratsandry branch	(12 added)	-	-
Soalala-Besalampy	-	97	-
Besalampy-Tambohorano	-	-	104
+Tambohorano branch			
Tambohorano-Maintirana	-	46	-
Manantenina; Manambondro	-	54	-
+ Amparihy branch			
Manambondro-Vangaindrano	-	-	35
+ Matanga branch			5 (added)
TOTALS	241	248	223
	(+12 added)		(+5 added)

C. Warehousing of Material and Workshops

It is planned to ship all the project material to the ports of Majunga and Fort Dauphin. Both of these ports are served regularly by international shipping lines.

The port of Fort Dauphin will receive and warehouse the material destined for the P & T workshops serving Ambondro-Ampanihy and Manantenina-Vangaindrano. Majunga will receive and warehouse the material for the P & T workshops serving Marovoay-Maintirano and Antsalova-Belo-Sur-Tsiribihina.

The workshops are equipped with facilities and personnel to perform among other duties the preliminary work of drilling holes and weatherproofing the poles prior to their issue to the construction crews.

The material will be divided for the depots at Majunga and Fort Dauphin in the amounts required to support the sector efforts each services. Numbers of specific items will be adjusted to conform with standard packaging quantities.

D. Project Design

The 712 miles of new lines and the additional 17 miles of circuit additions to existing lines are designed to CCITT carrier current standards for frequencies up to 160 kilohertz. The lines will be fully transposed to permit the addition of telephone carrier equipment as the voice-frequency circuits become loaded.

Poles will consist of 6 meters and 7 meter lengths of steel channel. Steel cross-sections have been calculated for planned conductor loands and to withstand wind loands of 70 mi/hr (115 km/hr.) in cyclone free areas and 95 mi/hr (150 km/hr) in cyclone areas with minimum safety factors of 300%.

To reduce procurement costs, poles sizes have been reduced to three standard sizes-one 7 meter length and two 6 meter lengths (one heavy and one light cross-section).

Annex V (Cont').

D. Project Design (Cont')

	POLES			Conductor (Metric Tons)	
Year	6 meter (Heavy Weight)	6 meter (Light Weight)	7 meter	2.91 mm	2.64 mm
1	480	4,308	124	47.9	4.2
2	2,629	2,956	138	45.9	13.0
3	399	4,324	93	38.9	6.5
Totals	3,508	11,588	355	132.7	23.7

Total Quantities for Project

Poles:	6 meter (Light Weight	11,588 (738 metric tons)
	6 meter (Heavy Weight	3,508 (284 metric tons)
	7 meter	355 (40 metric tons)
Conductors:	2.64 mm (# 10 AWG)	23.7 metric tons
	2.91 mm (# 9 AWG)	132.7 metric tons

ANNEX VI

AID-DLC/P-1090
May 25, 1973

DETAILED COST ESTIMATE

I. **Steel for Poles @ 10.4¢/lb. FAS U.S. Port**	
UPN-100 - 738 metric tons = 1,623,600# =	$168,860
UPN-120 = 284 metric tons = 624,800# =	64,980
UPN-140 - 40 metric tons = 88,000# =	9,150
Cost of Steel FAS	$242,990
Shipping - $58.75/long ton +15% = 67.56 (1,043 tons)	70,470
Total Cost of Steel CIF	$313,460
II. **Copperclad Conductor**	
Conductor 343,400 lbs. @ $77/100 lbs.	264,420
Couplings, Splicing Sleeves and Tools	10,380
FAS Cost of Conductors & Auxiliaries	274,800
Shipping Copper 343,400 # plus couplings, etc.	27,470
Shipping of couplings, etc.	1,040
Total Cost Conductor & Auxilliaries	303,310
III. **Line Hardware**	
Insulators, Insulator Pins, Crossarms, Crossarm brackets, Guy wire, Bolting materials, Anchors, Cable-grips..	~~265,732~~
Shipping of above items	26,573
TOTAL I, II, III	$909,075
IV. **Total Costs Foreign Exchange (A.I.D) (I - III above)**	
Equipment	783,555
Shipping	125,520
Procurement Services	55,000
Contingency	235,925
Subtotal	$1,200,000
Local Costs (P&T) Installation Costs	300,000
TOTAL COSTS	$ 1,500,000

ANNEX VII

DETAILS OF INTERNAL RATE OF RETURN ANALYSIS

A. Capital Costs: Cost include procurement and installation of materials and contingencies.

B. Operating Costs: Incremental operating costs are zero, since no new personnel are required (2 or 3 additional staff members will be required for the 90 miles of new lines, but this is insignificant) and will be balanced by reduced maintenance cost of the rehabilitated lines.

C. Maintenance Costs: Routine maintenance costs are the same for the old and new lines since staffing of maintenance crews remains the same. Cost estimated using P & T formula (approximately 1.75% of project equipment costs). Reconstruction costs for old line would total $1.6 million, not including contingencies, over 20-year project life, or $80,000 per year. If all lines are replaced and reconstruction is done on an *ad hoc* basis, the costs would be considerably more than reconstruction under the project (higher costs due to inability take advantage of bulk procurement and shipping and more efficient installation by construction crews).

D. Revenues: Revenues would increase at only 2% per year for years 0-15 without the project due to outages and generally poor service on the existing single-wire lines. Revenues increase at normal system-wide rate of 5% after year 15 since by that time much of existing system would have been replaced under the piecemeal rehabilitation program. For the new project, revenues will increase rapidly as the pent-up demand for service is met by the availability of new circuits then would fall off to normal annual 5% growth. (There has been a 7% revenue growth in recent years on the overall P & T system.)

	(1) Project Capital Costs 1/	(2) Maint. Cost Savings 2/	(3) Revenues Without Project 3/	(4) Revenues With Project 4/	(5) Incremental Revenues	(6) Net Benefits (2)+(5)-(1)	(7) Discount Factor at 12%	(8) Discounted Net Benefits (6) x (7)
0	1,200.0	-	113	113	-	-1,200.0	-	-1,200.0
1	100.0	80.0	115	105	-10	-30.0	0.893	-27.0
2	100.0	80.0	117	125	8	-12.0	0.797	-10.0
3	100.0	80.0	120	175	55	35.0	0.712	25.0
4		80.0	122	229	107	187.0	0.636	121.0
5		80.0	125	241	116	196.0	0.567	111.0
6		80.0	127	253	126	206.0	0.507	105.0
7		80.0	130	266	136	216.0	0.452	99.0
8		80.0	133	280	147	227.0	0.404	94.0
9		80.0	136	294	158	238.0	0.361	86.0
10		80.0	139	309	170	250.0	0.322	81.0
11		80.0	142	324	182	262.0	0.287	77.0
12		80.0	145	340	195	275.0	0.257	73.0
13		80.0	148	357	209	289.0	0.229	67.0
14		80.0	151	375	224	304.0	0.205	63.0
15		80.0	154	394	240	340.0	0.183	58.0
16		80.0	162	414	252	332.0	0.163	54.0
17		80.0	170	435	265	345.0	0.146	50.0
18		80.0	178	457	279	359.0	0.130	46.0
19		80.0	186	480	294	374.0	0.116	43.0
20		80.0	194	504	310	390.0	0.104	39.0
								+ 55.0
						Internal Rate of Return		12.4%

1/ Project cost including contingencies
2/ Routine maintenance costs of new versus old line less expected piecemeal reconstruction cost of old line
3/ Growth rate 2% per annum years 1-15, 5% per annum thereafter
4/ Growth inhibited by construction through year 2, rapid growth year 3 & 4, 5% growth thereafter

ANNEX VIII

ADDITIONAL FINANCIAL INFORMATION

The P & T revenues increased by 12.5% to $14.75 million in 1971 over 1970. (1972 figures are not available.) In 1971, expenses went up only 5.5% to $10.75 million. The P & T's fund available for investments thus increased by 25% from $2.9 million in 1970 to $4.0 million in 1971. Investments made by the P & T increased by 40% in 1971 from $2.4 million to $3.55 million, consequently, the P & T's surplus declined from $500,000 in 1970 to $450,000 in 1971.

With more normal revenue growth patterns in the future, the P & T expects to be able to generate surpluses in the million dollar range. Debt servicing will increase rapidly in the 1970 possibly to at least $1,000,000 a year in 1980. This could place a severe crimp on the P & T's ability to generate an operating surplus if it still is making major additions to its plant at that time.

The P & T does not appear to have an effective system of allocating its costs between the postal and telecom services among its various operating subsidiaries.

TABLE VIII - 1

Malagasy
Posts and Telegraphs

Receipts (in millions - $)

	1970	1971
Postal	$ 4.1	$ 4.40
Telegraph	1.6	1.90
Telephone	5.3	6.75
Other	2.1	1.70
TOTAL	$13.1	$14.75

Expenses (in millions * of $)

	1970	1971
Salaries, etc.	$ 6.30	$ 6.55
Supplies & Operating Costs	2.00	2.15
Payments to International Carriers, etc.	.70	.80
Repairs	.55	.50
Loan Repayments	.15	.25
Other	.50	.50
TOTAL	$10.20	$10.75
Available for Investment	$ 2.9	$ 4.00
Investment	2.4	3.55
Surplus	$ .5	$ .45

* Expenses not costed against various operations of the P & T, therefore net of various operations not known. The P & T investments are not broken down by category.

TABLE VIII- 2

Telephone and Telegraph Receipts

Receipts (in millions)

	Telephone**	Telegraph***	Number of Subscriber****
1962	$2.30	$ .8	
1963	2.50	.9	
1964	3.00	1.0	
1965	3.40	1.1	
1966	4.30	1.2	9,864
1967	4.25	1.0	10,376
1968	4.60	1.4	11,091
1969	5.10	1.4	11,780
1970	5.30	1.6	12,548
1971	6.75*	1.8	13,417
1972 (est.)	7.35	1.9	14,100
1975 (1)	8.25	2.0	
1980	10.50	2.1	
1985	13.25	2.2	

* 20% rate increase in 1971.

** 2-year moving average adjusted for 1971 rate increase indicates telephone revenues increasing at 12.5% per year over 10 years slowing to 9% per year since 1966.

*** 2-year moving average indicates telegraph revenue growth average 8% per year.

**** Revenue per subscriber averages about $500 per year. Subscriber growth about 7% to 8% a year. (Revenue per subscriber is very high there is no adequate explanation readily available).

(1) 1975,1980 and 1985 receipts estimated by adjusting P & T's own predictions of system growth to actual 1971 revenues. We expect that by 1985 the P & T's telephone revenues may exceed $16 million and telegraph revenues may exceed $2.5 million.

TABLE VIII - 3

Foreign Loans
To Malagasy P & T

Name & Date	Amount	Terms		
Caisse Central (France) 1965	$ 500,000	15 years	3.5%	5 year grace
F.A.C. (France) 1968	250,000	15 years	3.5%	5 year grace
French Guaranteed Loan 1969	2,000,000	15 years	3.5%	5 year grace
Agency for International Development 1967	2,000,000	20 years	3.5%	5 year grace
Japan 1973	8,000,000	20 years	4.0%	5 year grace
Agency for International Development 1973	1,200,000	20 years	3.5%	5 year grace

TOTAL FOREIGN LOANS $13,950,000

Average interest cost per year about
3½% $500,000

Average interest cost per year if loans
were at 6% $840,000

Total debt servicing per year in 1980
about $1,100,000 declining
slightly thereafter

UNCLASSIFIED

ANNEX IX

AID-DLC/P-1090
May 25, 1973

CERTIFICATION PURSUANT TO SECTION 611(e) OF THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

I, Joseph A. Mendenhall, the principal officer responsible for U.S. affairs in the Malagasy Republic, having taken into account, among other things, the maintenance and utilization of the previous telecommunications project financed by the United States (A.I.D. Loan No. 687-H-002), as well as the maintenance and utilization of projects financed by the World Bank and other donors, do hereby certify that in my judgement the Malagasy Republic has both the financial and human resources capability to effectively utilize and maintain the facilities to be installed under the Telecommunications System Expansion and Modernization Project, Phase II.

/s/ Joseph A. Mendenhall
U.S. Ambassador to the
Malagasy Republic

Date: February 16, 1973

CAPITAL ASSISTANCE LOAN AUTHORIZATION

Provided from: Development Loan Funds
Malagasy Republic: Telecommunications - Phase II

Pursuant to the authority vested in the Assistant Administrator for Africa of the Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Part I, Chapter 2, Title I, the Development Loan Fund, to the Director Generale des Postes et Telecommunications of the Malagasy Republic ("Borrower") of not to exceed One Million Two Hundred Thousand Dollars ($1,200,000) to assist in financing the foreign exchange costs of goods and related services for the Malagasy Telecommunications Project-Phase II. This loan is subject to the following terms and conditions:

1. Interest Rate and Terms of Repayment

(a) Borrower shall, in legal tender of the Malagasy Republic, pay to the Government of the Malagasy Republic ("Government").

(i) An amount equivalent to the amount of the loan within twenty (2) years, including a grace period of not to exceed five (5) years.

(ii) Interest at the rate of three and one-half percent (3-½%) per annum on the outstanding balance payable to the under Sub-paragraph (i).

(b) The Government shall, in United States dollars:

(i) Repay the loan to A.I.D. within forty (40) years from the date of the first disbursement under the loan, including a grace period not to exceed ten (10) years.

(ii) Pay A.I.D. interest on the unrepaid principal and any interest accrued theron at the rate of two percent (2%) per annum during the grace period and three percent (3%) per annum thereafter.

2. Other Terms and Conditions

(a) Goods and services financed under this loan shall be of A.I.D. Geographic Code 941 source and origin.

(b) The loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

____
Assistant Administrator for Africa

____
Date