PD-AAV-837

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete) — Amendment Number: _____ — DOCUMENT CODE: 3

2. COUNTRY/ENTITY: Tanzania-Zambia Railway Authority (TAZARA)

3. PROJECT NUMBER: 690-0240

4. BUREAU/OFFICE: Africa/Southern Africa Regional — 06

5. PROJECT TITLE (maximum 40 characters): Regional Transport Development - Dar es Salaam Corridor

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 08 DD 31 YY 91

7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4): A. Initial FY 87 — B. Quarter 4 — C. Final FY 87

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 87 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(45,950)	(-)	(45,950)	(45,950)	(-)	(45,950)
(Loan)	(-)	(-)	(-)	(-)	(-)	(-)
Other U.S. 1.	-	-	-	-	-	-
Other U.S. 2.	-	-	-	-	-	-
Host Country		3,868	3,868	-	3,868	3,868
Other Donor(s)	204		204	204		204
TOTALS	46,154	3,868	50,022	46,154	3,868	50,022

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) ESF	800	824				8,450	-	8,450	-
(2) 106	800	824				37,500	-	37,500	-
(3)									
(4)									
TOTALS						45,950		45,950	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 820 609 874 730

11. SECONDARY PURPOSE CODE: 731 771

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	INTR	TECH	TNG				
B. Amount	41,619	3,406	1,075				

13. PROJECT PURPOSE (maximum 480 characters)

To strengthen and expand the carrying capacity and improve the operational efficiency of the Tanzania-Zambia Railway Authority (TAZARA).

14. SCHEDULED EVALUATIONS: Interim MM 10 YY 89 — Final MM 07 YY 91

15. SOURCE/ORIGIN OF GOODS AND SERVICES: [X] 000 [ ] 941 [X] Local [X] Other (Specify) SADCC Countries

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a ____ page PP Amendment.)

Clearance:Controller:USAID/Zimbabwe

17. APPROVED BY — Signature: Allison B Herrick — Title: Allison B. Herrick, Mission Director/USAID/Zimbabwe — Date Signed: MM 07 DD 09 YY 87

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM DD YY

AID 1330-4 (8-79)

AGENCY FOR INTERNATIONAL DEVELOPMENT

WASHINGTON D C 20523

September 8, 1987

ACTION MEMORANDUM FOR THE ACTING ADMINISTRATOR

SEP 8 2 33 PM '87

THRU: AA/PPC: Richard E. Bissell

FROM: AA/AFR: Charles L. Gladson

SUBJECT: Authorization of Southern Africa Regional Transport Development - Dar es Salaam Corridor Project (690-0240)

Problem: Your approval is required to authorize the $45.95 million Dar es Salaam Corridor project under the Southern Africa Regional Transport Development project series. A fourth quarter FY 1987 obligation is proposed for the entire amount ($37.5 million in Section 106 funds from the FY 1987 Supplemental Appropriation and $8.45 million from ESF). The project seeks to improve the capacity and operational efficiency of the Tanzania-Zambia Railway Authority (TAZARA) through the provision of new locomotives and spare parts; managerial and technical assistance; and training.

The project is referred to you for authorization because of several special factors: 1) a comingling determination required by Handbook 1B, Chapter 9, in view of the close relationship of this project to assistance provided to the grantee by the Peoples Republic of China; 2) a sole source waiver to permit spare parts in excess of $1 million and related technical assistance to be procured non-competitively from the General Electric Company; and 3) restriction of the authorized Geographic Code for procurement of the locomotives and locomotive spare parts to Code 000 (U.S. only), when the normal authorized Geographic Code would be Code 941.

Background: In FY 1986 an umbrella PID was approved for a series of interrelated transport projects under the aegis of the Southern Africa Development Coordination Conference (SADCC). The Malawi Northern Corridor project (690-0237) was the first such project to be authorized, in July 1986. The ultimate success of the Malawi project depends in part on reliable and efficient operation of the TAZARA railroad between Mbeya and Dar es Salaam.

The present project, aimed at upgrading TAZARA's technical and management capacity, is, at $45.95 million, the largest project to be undertaken to date under the entire A.I.D. Southern Africa Regional Program. It reflects SADCC's highest priority of improving the regional transportation system and reducing reliance on South Africa for access to the sea by its six landlocked member countries. The project will directly benefit

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two of these landlocked countries, Zambia and Malawi, by providing cost effective access to the port of Dar es Salaam, and will clearly benefit Tanzania, the principal venue of activities under the project.

The project will provide directly to TAZARA as grantee and implementing agency 17 new locomotives ($25.5 million) and 20 percent related spare parts ($5.1 million); spare parts for 13 existing electric locomotives ($1.0 million); tools and equipment for workshops ($1.8 million); workshop extension at Mbeya ($0.4 million); both long- and short-term managerial, technical and accounting services ($4.2 million); training ($1.1 million); and contingency/inflation ($6.9 million).

Most procurement will be conducted directly by TAZARA under Handbook 11 Host Country contracting procedures, with assistance by the REDSO/ESA Commodity Management Officer and technical assistance supplied under the project. The project design team concluded that, using the TA provided under the project, TAZARA has the necessary experience, procedures and skills to conduct the procurement successfully. Overall A.I.D. management responsibility will rest with USAID/ Tanzania. See Discussion section below for treatment of issues on procurement and A.I.D. management.

The project proposes a total of 261 person/months of long-term (144 p/m) and short-term (117 p/m) technical assistance in various contracting modes: 36 p/m of locomotive engineering assistance under a sole source waiver with GE for the overhaul and repair of the 13 existing GE locomotives; 36 p/m of locomotive engineering assistance as part of the new locomotive procurement contract; 36 p/m of financial management assistance (an accountant contracted under a PSC); a Railway Operations Management contract, competitively awarded, including a long-term railway management specialist (36 p/m), 75 p/m of short-term technical and 42 p/m of short-term financial assistance.

Discussion: The following project issues were discussed and resolved during the A.I.D./W review. With these adjustments, the ECPR recommended approval of the project.

1. Procurement procedures for new locomotives: With only two eligible U.S. manufacturers likely, the PP recommended competitive negotiation between them (General Electric and General Motors). However, it was determined that the conditions for competitive negotiation set forth in Handbook 11, Chapter 3 had not been met and that a two-step formal competitive procurement process was indicated as the normal procedure to ensure a solicitation that is both objective and defensible. Because of the complexity and cost of the procurement, assistance will be provided under an IQC in the review of the technical specifications prepared by TAZARA and

the conduct of the procurement of the new locomotives and the spare parts for the existing locomotives. At the same time the IQC team will assess the different levels of associated items, such as technical assistance, training, tooling, inventory records, etc. that may be required from different suppliers to provide TAZARA with an equal end product. This information will assist in evaluating bids in the prospective two-step IFB.

2. Source/origin of the locomotives and locomotive spare parts: It was agreed that procurement of the locomotives and locomotive spare parts should be limited to Code 000 (U.S. only), in order to ensure satisfactory quality for these major items of capital equipment which are the centerpiece of the project. All other project commodities, including workshop equipment and tools, as well as related services, may be procured from Code 941 countries. Limiting locomotive procurement to U.S. source/origin involves a departure from the normal standard for grants to governments and their entities for regional projects under the SADCC umbrella, which provides for Code 941 as the authorized Geographic Code for the project as a whole, if a principal beneficiary country under the project is a relatively least developed country (RLDC) and thus eligible for Code 941 procurement. In accordance with Handbook 1B, Chapter 5, Section 5A4.b., your concurrence is requested in the decision to limit procurement of the locomotives and locomotive spare parts to Code 000 (U.S. only). This is reflected in the project authorization, and your signature on the authorization constitutes your approval of this action.

3. Comingling Determination: Because of the close interrelationship of this project with assistance provided over a period of years to TAZARA by the Peoples Republic of China, a determination by the Administrator is required pursuant to Handbook 1B, Chapter 9, that this project is in the best interests of the U.S., based on the recommendation of the U.S. embassies and USAIDs in Tanzania and Zambia. The justification for this determination, which is contained in Annex U to the Project Paper, notes that 60 percent of the $37.5 million in Section 106 funds, or $22.5 million, was earmarked for a northern corridor transport project by the FY 1987 Supplemental Appropriations Act and that this project is the only feasible such activity which is not already fully funded. Your signature on the project authorization constitutes your approval of this determination.

4. Sole source waiver for GE spare parts: The only waiver associaced with the project at this time is a sole source waiver to permit procurement of up to $1.5 million of spare parts for TAZARA's existing 13 General Electric/Krupp locomotives directly from GE (US) and an estimated $750,000 in related technical assistance. This waiver, whose justification is contained in Annex T of the Project Paper, is based on a recent decision by GE to sell spare parts only to end-users and no longer to traders and suppliers. GE says it has been forced

to take this action because middlemen frequently sell inferior imitation parts as genuine GE parts. It has put its end-users on notice that henceforth, GE itself will be the only source of genuine GE parts. The waiver notes that given the uncertain quality control and often inferior metallurgy of "clone" spare parts provided by other firms for GE locomotives, it is too risky to use such parts, which may cause serious damage to the locomotive's engine and other moving parts. Since this procurement is greater than $1 million, it exceeds the authorized limits of AA/Africa and must be approved by you as part of the project authorization.

5. USAID Project Management: The case for a full-time Project Manager for the TAZARA project in the Tanzania mission was strongly made and accepted at the ECPR, and later concurred in by the U.S. Ambassador to Tanzania during his Washington visit in mid-August. The project was seen as too large and complex to be managed by mission staff on a part-time basis.

6. TAZARA as Grantee: The project's grantee is the Tanzania-Zambia Railway Authority (TAZARA), an independent binational entity jointly owned by the governments of Tanzania and the Republic of Zambia. TAZARA was considered to be the most appropriate grantee, since it is the target of assistance and implementing agency, and since it would be difficult to coordinate grants to two separate governments. TAZARA's legal capacity to receive and implement the grant have been confirmed by its legal counsel and reviewed by REDSO's Regional Legal Advisor, and its financial and technical capacity to implement the project have been found satisfactory. Both governments have given their approval of the project through requests for assistance and through their membership on TAZARA's board of directors. The ECPR decided that it would be useful to reinforce this approval, however, by requesting each government to provide, prior to the first disbursement, written assurances to A.I.D. in the form of a Memorandum of Understanding covering the following points:

a. Their explicit approval of the project, as presented in the Grant Agreement.

b. Their commitment to provide necessary facilities to expatriate project personnel, such as visas, work permits, travel rights, and tax and duty exemptions. TAZARA has authority to grant duty-free entry to project commodities, and in the project agreement will agree to A.I.D.'s standard clause to refund any taxes that are charged (such as on project personnel).

c. Their commitment to accord a high priority to TAZARA's foreign exchange requirements, to ensure that TAZARA's essential foreign exchange needs are met on a continuing basis. While TAZARA is already entitled to retain half of its foreign exchange earnings, since its tariff structure produces

revenues mainly in the two local currencies, the present foreign exchange retention will be insufficient to fulfill TAZARA's future needs for imported equipment and spare parts.

d. Their assurances to support adjustments to the tariff structure introduced by TAZARA under its own authority, to ensure a profitable operation and to provide for capital replacement, while at the same time maintaining its competitive position with respect to alternative routes. In this connection, endorsement by the two governments of the concept of a local currency amortization fund into which TAZARA would pay as a quid pro quo for receiving the locomotives on a grant basis would be desirable, including, if possible, a prospective timetable for its establishment. Since exploratory analysis and negotiation with TAZARA would be necessary, the creation of such a fund is a Covenant rather than a Condition Precedent.

The Congressional Notification waiting period for this project expired without objection on August 6, 1987.

A negative determination for environmental effects has been approved by the Bureau Environmental Officer and cleared by GC/AFR.

Obligation will not be incurred until the report to Congress and certification required by the FY 1987 Supplemental Appropriations Act have been completed.

Recommendation: That you sign the attached Project Authorization, thereby approving the Southern Africa Regional Transport Development - Dar es Salaam Corridor Project, in the amount of $45,950,000.

ATTACHMENT:
Project Authorization

Drafted: AFR/PD/SA: MGilbert (3449L) 8/10/87
Clearances:
AFR/PD/SA: MARiegelman (Draft)
AFR/SA: FFischer (Draft)
AFR/EA: SMintz (Draft)
AFR/TR/ENG: PThorn (Draft)
AFR/DP: JGoven (Draft)
GC/AFR: MAKleinjan (Draft)
AFR/CONT: RKing (Draft)
SER/OP/COMS: MMcDaniel (Draft)
M/AAA/SER: JOwens (Draft)
AAA/PPC/PDPR: SCallison (Draft)
AFR/PD:CPeasley
DAA/AFR: WBollinger
AFR: HFry

PROJECT AUTHORIZATION

Country: Southern Africa Regional

Project Name: Regional Transport Development - Dar es Salaam Corridor

Project Number: 690-0240

1. Pursuant to Sections 106 and 531 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Regional Transport Development - Dar es Salaam Corridor project (the "Project") for the Southern Africa Region, involving planned obligations of not to exceed forty five million nine hundred fifty thousand United States dollars ($45,950,000) in grant funds over a one year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the Project. The Project Assistance Completion date is August 31, 1991, except as A.I.D. may otherwise agree in writing.

2. The Project will consist of assistance to strengthen and expand the carrying capacity and to improve the operational efficiency of the Tanzania - Zambia Railway Authority (TAZARA) through the provision of commodities, construction services, technical assistance and training.

3. The Project Agreement, which may be negotiated and executed by the officers to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

4a. Source and Origin of Commodities, Nationality of Services.

Except as A.I.D. may otherwise agree in writing:

(1) Locomotives and locomotive spare parts financed by A.I.D. under the Project shall have their source and origin in the United States.

(2) Suppliers of locomotives and locomotive spare parts financed by A.I.D. under the Project shall have the United States as their place of nationality.

(3) Commodities, other than locomotives and locomotive spare parts, financed by A.I.D. under the Project shall have their source and origin in countries included in A.I.D. Geographic Code 941 for foreign exchange costs and in Tanzania and Zambia for local currency costs.

(4) Suppliers of commodities other than locomotives and locomotive spare parts, and suppliers of services, except for ocean shipping, financed by A.I.D. under the Project shall have as their place of nationality countries included in A.I.D. Geographic Code 941 for foreign exchange costs and Tanzania and Zambia for local currency costs.

(5) Ocean shipping for locomotives and locomotive spare parts financed by A.I.D. under the Project shall be financed only on flag vessels of the United States.

(6) Ocean shipping for commodities, other than locomotives and locomotive spare parts, financed by A.I.D. under the Project shall be financed only on flag vessels of the United States, countries included in A.I.D. Geographic Code 941, and Tanzania and Zambia.

4b. Conditions Precedent

(1) First Disbursement. Prior to the first disbursement under the grant, except for planned pre-implementation technical assistance related to project procurement, or to the issuance of documentation pursuant to which such disbursement may occur, the Grantee shall submit to A.I.D., in form and substance satisfactory to A.I.D., except as A.I.D. may otherwise agree in writing:

(a) Written statements from the Government of Tanzania and the Government of the Republic of Zambia that:

(i) They explicitly approve the Project, as presented in the Grant Agreement;

(ii) They will provide necessary facilities to expatriate Project personnel (such as visas, work permits, travel rights and tax and duty exemptions);

(iii) They will accord a high priority to TAZARA's foreign exchange needs; and

(iv) They will support tariff adjustments proposed by TAZARA that take into account operating and capital replacement costs, as well as TAZARA's competitive position in relation to other transport systems in southern Africa.

(b) Evidence that TAZARA has formally designated an individual at TAZARA who will be Project Coordinator, oversee Project activities and chair Project Committee meetings, and that the Project Committee has been established with membership from A.I.D., TAZARA, the rail management contractor, and the contractor providing long-term assistance in locomotive maintenance.

(2) Disbursement for Mbeya Workshop Extension. Prior to disbursement of funds under the grant for extension of the workshop at Mbeya, or to the issuance by A.I.D. of documentation pursuant to which such disbursement may occur, the Grantee shall provide to A.I.D., in form and substance satisfactory to A.I.D., except as A.I.D. may otherwise agree in writing, plans and specifications, architectural drawings, cost estimates and bidding documents for the construction.

(3) Disbursement for the Second Tranche of Locomotives. Prior to disbursement of funds for the procurement of the second tranche of nine locomotives, or to the issuance by A.I.D. of documentation pursuant to which such disbursement may occur, the Grantee shall provide to A.I.D., in form and substance satisfactory to A.I.D., except as A.I.D. may otherwise agree in writing:

(a) Evidence that the TAZARA tariff structure is adequate to cover operating costs and generate a net profit on operations to TAZARA or that a proposal has been accepted to revise the tariff structure, taking into account the recommendations of the technical assistance financed by the Project;

(b) Evidence that critical vacancies in TAZARA's planning and accounting departments have been filled, or adequate plans have been made to fill such vacancies.

4c. Covenants. TAZARA shall covenant, except as A.I.D. may otherwise agree in writing, that:

(1) During the life of the Project and for a period of 3 years immediately thereafter, it will annually reserve from its foreign exchange earnings an amount equivalent to not less than United States $500,000 for the purchase of spare parts for repair and maintenance of all locomotives in the fleet.

(2) It will make appropriate financial provision for systematic replacement of capital equipment, either through the establishment of an amortization fund or a similar budgetary mechanism. In this connection, TAZARA will consider the recommendations of the project's railway management team with respect to financial management and planning.

(3) It will identify a counterpart for each Project-funded consultant (whether long or short term) who will have assumed duty prior to the arrival of the consultant, and that the counterpart will be assigned on a full-time basis to work with the consultant during the period of the consultant's assignment.

(4) All personnel sent for long term training under the Project will be required to return to work for TAZARA in a position making use of the training provided for a period of not less than 2 years for every year of training provided, up to the limits set by TAZARA's bonding agreement. TAZARA will require each trainee selected to sign a written commitment to this effect prior to the commencement of training.

(5) All spare parts for diesel electric locomotives will be used to repair and maintain locomotives on as-needed basis regardless of whether the locomotives are assigned to Tanzania or Zambia.

4d. Waiver. Based on the authority and justification contained in Annex T of the Project Paper, I hereby approve sole source procurement of up to $2,225,000 of locomotive spare parts and related technical services from the General Electric Company.

4e. Comingling Determination. Based on the authority and justification contained in Annex U of the Project Paper, I hereby determine that it is in the best interest of the United States to provide assistance to TAZARA.

Jay F. Morris
Acting Administrator

Date: 9-11-87

DEFINITION OF TERMS

Re-engine/Re-power	- The replacement of Chinese engines by German MTU.
Retrofit	- Replacement of Chinese engines together with replacement of electrical hiring and other needed items.
Northern Corridor	- Northern Transport Corridor in Malawi which allows goods to be transported from Blantyre (Malawi) to Mbeya (Tanzania) and onto the port of Dar es Salaam via TAZARA Railway in both directions.

* TAZARA Fiscal Year - July 1 - June 30
USAID Fiscal Year - October 1 - September 30

RATES (CURRENCY EQUIVALENTS)

(June 13, 1987)

Currency Units = Tanzanian Shilling (Tsh)
= Zambian Kwacha (ZK)

ZK 1.00	=	US$ 0.13
US$1.00	=	ZK 7.84
TSh1.00	=	US$ 0.02
US$1.00	=	TSh 61.37
ZK 1.00	=	TSh 7.82

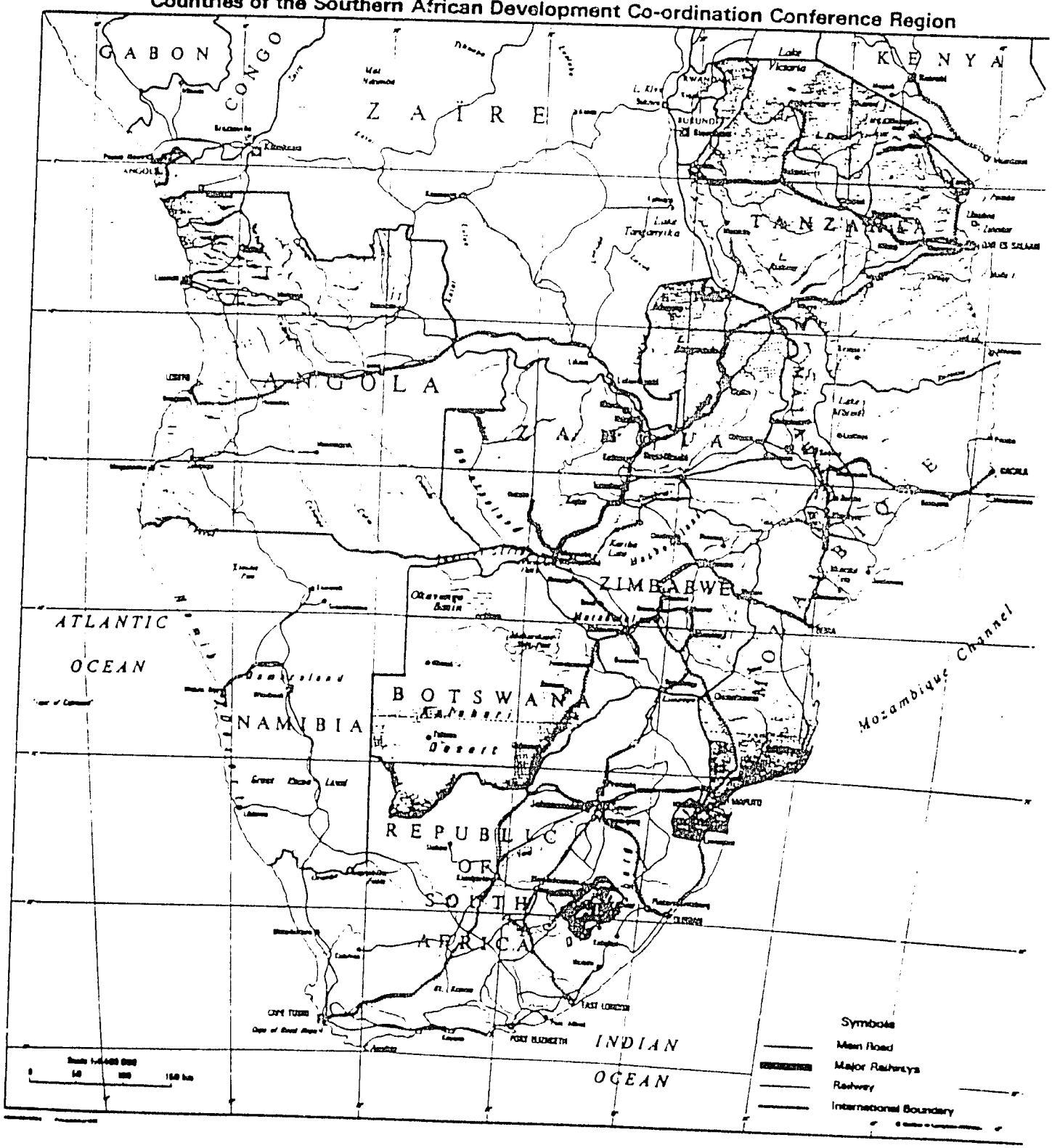
ABBREVIATIONS, ACRONYMS, RATES, WEIGHTS AND MEASURES

ADB	-	African Development Bank
AID	-	Agency for International Development
AID/T	-	U.S. AID Mission in Tanzania
AID/Z	-	U.S. AID Mission in Zimbabwe
CFM	-	Caminhos de Ferro Mocambique
CIDA	-	Canadian International Development Agency
CL	-	Coopers and Lybrand
CPA	-	Certified Public Accountant
CPCS	-	Canadian Pacific Consulting Services
CRET	-	Chinese Railway Expert Team
DANIDA	-	Danish International Development Agency
DE	-	Diesel Electric locomotives
(DE/KRUPP	-	Diesel Electric locomotives manufactured by German Krupp under General Electric)
DFH	-	Dong Feng Hong locomotives, made in China
(DFH1	-	Chinese diesel hydraulic locomotive shunter)
(DFH2	-	Chinese diesel hydraulic locomotive mainline)
(DFH/MTU	-	Chinese diesel hydraulic locomotive with Chinese engines replaced by German MTU engines)
DNPCF	-	Direccao Nacional dos Portos e Caminhos de Ferro
EDF	-	Economic Development Fund
EEC	-	European Economic Community
ERR	-	Economic Rate of Return
ESAMI	-	Eastern and Southern Africa Management Institute
FAA	-	Foreign Assistance Act
FINNIDA	-	Finnish International Development Agency
FRG	-	Federal Republic of Germany
FX	-	Foreign Exchange
FY*	-	Fiscal Year
GDP	-	Gross Domestic Product
GDR	-	German Democratic Republic (East Germany)
GE	-	General Electric
(GE U30	-	Diesel electric locomotives manufactured by General Electric of specific type U30 or U30C)
GM	-	General Motors
hp	-	horse power
IBRD	-	International Bank for Reconstruction and Development (World Bank)
IDA	-	International Development Association
IDM	-	Institute of Development Management
IEE	-	Initial Environmental Examination
IFB	-	Invitation for Bids
IG	-	Inspector General
IQC	-	Indefinite Quantity Contract
KfW	-	Kreditanstalt fur Wiederaufbau
Km	-	Kilometers
MSc	-	Master of Science degree
Mt	-	Metric tons
MTU	-	Motorem und Turbinem Union
NORAD	-	Norwegian Agency for International Development
NRZ	-	National Railways of Zimbabwe
ODA	-	Overseas Development Association
o-j-t	-	on-the-job training

PACD	-	Project Assistance Completion Date
PBI	-	Parsons Brinkerhoff International, Inc.
PID	-	Project Identification Document
PIL	-	Project Implementation Letter
PIO/P	-	Project Implementation Order/Participants
POL	-	Petrol, Oil and Lubricants
pm	-	person-month
PP	-	Project Paper
PRC	-	Peoples Republic of China
PSC	-	Personal Services Contract
PTA	-	Preferential Trade Area
RCMO	-	AID Regional Commodity Management Officer
RCO	-	AID Regional Contracting Officer
RDSS	-	AID Regional Development Strategy Statement
REDSO/ESA	-	AID Regional Economic Development Services Officer/East and Southern Africa (Nairobi)
RFMC	-	Regional Financial Management Center
RFP	-	Request for Proposals
RFQ	-	Request for Quotations
RO/RO	-	Roll On/Roll Off vessels
RSA	-	Republic of South Africa
S&T/OIT	-	USAID/Washington office of Science and Technology, Office of International Training
SADCC	-	Southern Africa Development Coordination Conference
SAI	-	Southern Africa Initiative
SARP	-	Southern Africa Regional Program, USAID/Zimbabwe
SARTD	-	Southern Africa Regional Transport Development
SATCC	-	Southern Africa Transport and Communications Commission
SATS	-	South African Transport System
SIDA	-	Swedish International Development Agency
ST/AID/WASH	-	USAID/Washington, Office of Science and Technology
TANZAM	-	Tanzania-Zambia Highway
TAZAMA	-	Tanzania - Zambia Oil Pipeline
TAZARA	-	Tanzania-Zambia Railway Authority
TEU	-	Twenty-feet Equivalent Unit
THA	-	Tanzania Harbor Authority
TISCO	-	Tanzania Industrial Services Company
TRC	-	Tanzania Railway Corporation
UDI	-	Unilateral Declaration of Independence
U.K.	-	United Kingdom
UNCTAD	-	United Nations Conference on Trade and Development
USA	-	United States of America
ZR	-	Zambia Railways

THE S.A.D.C.C. REGION

Countries of the Southern African Development Co-ordination Conference Region



REGIONAL TRANSPORT DEVELOPMENT (DAR ES SALAAM) CORRIDOR PP
(690-0240)
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ANNEXES

MAP

Southern Africa and SADCC Region Transport Links

TABLES

0.0. SUMMARY AND RECOMMENDATIONS

0.1 Responsibilities

A. Grantee

The Grantee for the Project will be the Tanzania - Zambia Railway Authority (TAZARA). TAZARA is a jointly-owned, international corporate body created by an agreement between the Governments of Tanzania and Zambia. Legislation of the two governments gives legal independence to TAZARA.

B. Implementing Agency

TAZARA, headquartered in Dar Es Salaam, Tanzania, will be the implementing authority for the project.

0.2 Recommendations, Sources and Uses of Funds

Authorization of a grant is recommended in the amount of $45,950,000 from the Economic Support Fund and Section 106 (Energy and Selected Development Activities) to TAZARA for the Regional Transport Development - Dar es Salaam Corridor Project over a period of four years commencing in August 1987. TAZARA's contribution to the project will be $3,868,000, representing 7.7% of total project costs.

0.3 Purpose of the Project

The purpose of the Project is to strengthen and expand the carrying capacity and improve the operational efficiency of TAZARA.

0.4 Background to the Project

The Southern Africa Development Coordination Conference (SADCC) places a high priority on improving the regional transportation system as a strategy for providing alternate routes to the sea for its six landlocked member countries and lessening all its member states' economic dependency particularly, though not exclusively, on the Republic of South Africa (RSA). SADCC's Southern Africa Transport and Communications Commission (SATCC) has identified the rehabilitation and improvement of the locomotive power of TAZARA as a top priority activity in the effort to lessen dependency on the RSA. TAZARA and the port of Dar es Salaam are currently one of the major viable outlets for the landlocked countries in the SADCC region. Improvement of the TAZARA line will establish an efficient and reliable transport route for their exports and imports at an affordable cost.

Assistance to TAZARA is also part of AID's strategy to improve the Northern Corridor Transport System. Support to TAZARA complements ongoing AID-funded regional transportation projects on the "Northern Corridor": (1) Regional Transportation Development I (690-0231), which provides spare parts to rehabilitate locomotives for Zambia Railways; and (2) the Malawi Northern Corridor Project (690-0237), which provides assistance to link Malawi to TAZARA and the port of Dar es Salaam. In addition, AID's grant to UNCTAD (690-0238), which is helping that organization develop and improve management and operating procedures regulating the flow of goods among SADCC member countries, will complement and strengthen the impact of these infrastructural activities.

The impact of the project will, in conjunction with the work of other donors and SADCC member states, help restore the regional transport system to its former status - one that is efficient, reliable, well-managed and maintained and of service to the majority of producers and consumers of the region.

The 1,860-km TAZARA single rail line, one of the major railways of the Central and East Africa railway systems, serves Zambia and Tanzania and provides an export/import link for Malawi and Zaire. In 1985/1986, the actual haulage of goods by the TAZARA locomotive fleet was 988,000 metric tons (MT). SATCC projections indicate an increase in goods to 1.9 million MT by 1991 and 2.1 MT by 1993. The increase in volume would originate in Zambia, Zaire, Malawi and, to a lesser extent, Zimbabwe. In order to haul the projected 2.1 million MT, it is estimated that an additional 17 high-powered diesel electric locomotives will be required.

Lack of spare parts, tools and equipment for workshops hamper the rehabilitation of wagons and locomotives at the workshops and, therefore, lower the availability of locomotive power. Lack of adequately trained staff in finance, planning, railway operations, and personnel management reduces the line's efficiency. These related problems have recently become critical because Zambia has directed 90% of its export trade to the Port of Dar es Salaam. Furthermore, Malawi, Zaire and Zimbabwe plan to increase usage of TAZARA by about 700,000 MT from 1986-1993. By 1990, when total Malawi external trade is forecast to reach about 932,000 MT, 56% of it is expected to go through the Nacala Port, 31% via the Dar es Salaam Port and TAZARA and the rest via Zimbabwe or Zambia. Because of the lack of an efficient alternative route, most of the landlocked SADCC states are forced to transport goods through the longer South Africa routes, consequently paying transport costs averaging $85 per ton higher than the cost to use TAZARA.

With AID assistance, it is projected that by the end of the project in 1991, daily average locomotive availability will have increased from the 1986 level of 46% to 65%. Increased locomotive power will have assisted TAZARA to increase its carrying capacity from the 988,000 MT hauled in 1986 to 1.9 million MT per year by 1991 and 2.1 million MT in 1993. The project will have enhanced TAZARA's capacity to maintain locomotives through improved workshop operations and will have improved the efficiency of overall operations through staff training and development.

To achieve its targets, the project provides funding for five mutually-supportive components: (a) the purchase of 17 new diesel electric (3200 hp) locomotives with spare and repair parts (eight in the second year and an additional 9 in the third year if evaluation findings, growth projections and traffic predictions indicate a continuing increase in traffic from the landlocked countries on the Dar es Salaam corridor); (b) the extension of the locomotive workshop at Mbeya in Tanzania to service diesel electric locomotives; (c) the provision of equipment and tools for TAZARA's workshops; (d) long-term training for degrees in accounting, computer sciences and economics, and short-term training in accounting and management, respectively; (e) 216 person-months of short- and long-term technical assistance.

By the end of AID's assistance, the provision of project locomotives will increase the total number of operative, high-powered diesel electric locomotives available to TAZARA from 13 to 30. The equipment, tools and spare parts will be used mainly at the Mbeya workshop for maintaining all the diesel locomotives stored and serviced there, but a minimum set of tools will also be provided for the Dar es Salaam and Mpika workshops.

The 216 person-months of technical assistance will: (a) assist the Mbeya workshop to improve its maintenance of diesel electric locomotive operations and provide on-the-job training for the maintenance crew; (b) assist the Finance Department to develop realistic costing figures, automate its functions and train staff on the job; (c) assist the Planning Department to conduct an assessment of existing capacity of mechanical equipment; and, (d) assist the Personnel Department to develop and implement a staff development and training plan.

SUMMARY OF AID's CONTRIBUTION

ITEM		COST IN US$
17 3200 hp diesel electric locomotives		25,500,000
Spare parts at 20% equivalent of costs of locomotives		5,100,000
45 person-months of technical services for on-the-job training and other technical work for diesel electric locomotives		967,000
Spare parts for 11 and repair parts for 2 GE/Krupp diesel electric locomotives presently in TAZARA's fleet		1,000,000
36 person-months of Technical services for overhaul of diesel electric locomotives and 12 person-months of services for inventory of parts		1,033,000
Tools and equipment for workshops		1,800,000
Mbeya workshop extension		400,000
Other managerial and technical services (long-term)		1,174,000
Other managerial and technical services (short-term)		2,112,000
Office equipment associated with Technical Assistance		150,000
Long- and Short-term training		1,075,000
Evaluation and financial audits		150,000
SUBTOTAL	$	40,461,000
Contingency and Inflation	$	5,489,000
TOTAL	$	45,950,000

The project will be managed on the part of AID by USAID/Tanzania with support services provided by REDSO/ESA in commodity management and procurement, engineering legal services and contracting. Financial management will be provided by the Controller, USAID/Tanzania and the Regional Financial Management Center (REMC), Nairobi.

Most procurement will be conducted by TAZARA using its own procedures as modified to ensure consistency with AID host country contracting procedures set forth in Chapters 1, 2, and 3 of Handbook (HB) 11. Direct Letters of Commitment and direct payment by AID will serve as the method of financing. Overall procurement and project implementation responsibilities will rest with the General Manager of TAZARA. The Regional Commodity Management Officer (RCMO) has reviewed TAZARA's standard procurement procedures and found them sound and generally conforming to AID guidelines. Procurement of locomotives, related technical services and spare parts will be through two-stage bidding or possibly competitive negotiation, depending on analyses to be carried out prior to the procurement (see page 92). Procurement of tools and equipment will be through formal competitive procedures. Short-term technical assistance in accounting, data processing, and financial management will be secured through existing IQCs between the Regional Financial Management Center (RFMC), Nairobi, and U.S. accounting firms with offices in East and Southern Africa. Railway management technical assistance will be procured by competitive procedures.

A Project Committee will be established and will meet monthly to review implementation issues and project progress. TAZARA will provide a full-time engineer to serve as its Project Coordinator. The Coordinator will chair the Project Committee meetings. The meetings will be attended by representatives from USAID/Tanzania, REDSO/ESA as needed, principal project contractors, RFMC and, on an as-needed basis, USAID/Zimbabwe staff.

Two evaluations are proposed during the life of project. Funds are provided for the evaluations and periodic audits through an independently certified public accounting firm.

0.5 Summary Findings

The Design Team has analyzed the technical, financial, institutional and social implications of the Project's activities. Each has been found to be sound. The initial eight locomotives to be procured with project funds will haul the projected increase in traffic from 988,000 MT in 1986 to 1,900,000 MT in 1991. An evaluation in 1989 will assess traffic demand, and if the current forecast of 2,120,000 MT in 1993 is supported by the trend at the time, 9 additional locomotives will be procured. The workshop expansion at Mbeya will accommodate maintenance and major repair of the diesel electric locomotives, including but not limited to those provided by A.I.D.

The project will help establish a better foundation for economic growth among the SADCC member states by establishing a more reliable and cost effective route to the sea and by lessening the region's reliance on South Africa.

The economic analysis shows a high economic rate of return (ERR) based on very conservative traffic flow scenarios. The worst case scenario results in an ERR of 23%.; the best case scenario yields a return of 29%.

0.6 Conditions Precedent to Disbursement

1. Prior to any disbursement, or to the issuance of any commitment documents under the Project Agreement, the Grantee shall furnish in form and substance satisfactory to AID evidence that: (i) TAZARA has formally designated an individual at TAZARA who will be Project Coordinator, oversee project activities and chair Project Committee meetings; and, (ii) the Project Committee has been established, with membership from USAID, REDSO/ESA, TAZARA and representatives each from the rail management contracting firm and the firm providing long-term assistance in locomotive maintenance, and has held an initial meeting.

2. Prior to disbursement of funds under the Grant for extension of the workshop at Mbeya or to the issuance by AID of commitment documentation with respect thereto, the Grantee will provide in form and substance satisfactory to AID, plans and specifications, architectural drawings, cost estimates and bidding documents for the construction.

3. Prior to disbursement of funds for the procurement of the second tranche of nine locomotives, or to the issuance by AID of any commitment documentation with respect thereto, the Grantee will provide in form and substance satisfactory to AID:

   a. Evidence that the TAZARA tariff structure is adequate to cover operating costs and generate a net profit on operations to the Authority or that a proposal has been accepted to revise the tariff structure, taking into account the recommendations following from technical assistance financed by the Project;

   b. Evidence that critical vacancies in the planning and accounting departments have been filled or adequate plans have been made to fill such vacancies.

0.7 Covenants

(1) The Grantee will covenant that during the life of the project and for a period of 3 years immediately thereafter, TAZARA will, unless otherwise agreed to by AID in writing, annually reserve from its foreign exchange earnings an amount equivalent to not less than US$500,000 for the purchase of spare parts for repair and maintenance of all locomotives in the fleet.

(2) The Grantee will covenant that it will identify a counterpart for each project-funded consultant (whether long- or short-term) who will have assumed duty prior to the arrival of the consultant, and that the counterpart will be assigned on a full-time basis to work with the consultant during the period of the consultant's assignment.

(3) The Grantee will covenant that all personnel sent for long-term training under the Project will be required to return to work for TAZARA in a position making use of the training provided for a period of not less than 2 years for every year of training received, up to the limits set by TAZARA's bonding agreement unless AID otherwise agrees in writing. TAZARA will require each trainee selected to sign a written commitment to this effect prior to the commencement of training.

(4) The Grantee will covenant that all spare parts for diesel, electric locomotives will be used to repair and maintain locomotives on an as-needed basis regardless of whether the locomotives are assigned to Tanzania or Zambia.

0.9 Principal TAZARA Contributors to the Project Design

S.C.I. Mapara	- General Manager
A.G.I. Shayo	- Deputy General Manager
A.S. Mweemba	- Corporate Planning Manager
L. Kasula	- Corporate Secretary (Legal Advisor)
Lucas Chogo	- Chief Mechanical Engineer
Mike Kachumi	- Financial Manager
John Mumba	- Traffic Manager
Rauno Rinamo	- Mechanical Engineer (Nordic Coordinating Unit)
Mr. L.Z. Mutakyahma	- Supplies Manager
Mr. F. Biabato	- Commissioner for Finance, Government of Tanzania
Mr. R. M. Minja	- Commissioner for Transport, Government of Tanzania
Dr. T. Tembo	- Zambian Trade Commissioner

0.10 Project Design Team

Janet Schulman	- Team Leader, Project Development Officer, USAID/Zimbabwe
Denis Light	- Engineer, USAID/Zimbabwe
Martin Schulman	- Human Resources Development Officer, USAID/Zimbabwe
Benjamin Mutiti	- Transport Economist, USAID/Zimbabwe
Pushkar Brahmbhatt	- Regional Engineer, REDSO/ESA
Bruce Stader	- Regional Commodity Management Officer REDSO/ESA
Paul Scott	- Regional Legal Advisor, REDSO/ESA
Belinda Barrington	- Regional Legal Advisor, REDSO/ESA
Laura McGhee	- Regional Contracting Officer, REDSO/ESA

1.0 BACKGROUND

1.1 Introduction

Southern Africa has an extensive rail, port and road transportation system which plays a key role in linking the region's countries to each other and, more importantly, to overseas markets. Transportation is a sector where regional interests are clearly defined and SADCC has, from its inception, placed the highest priority on the improvement of the region's transport systems. A principle objective of SADCC's Programme of Action for transport is to return the regional network to its former level of operational efficiency while at the same time upgrading present technological and operational standards to meet worldwide advances. Once these technical and operational improvements are achieved, SADCC member countries will be in a much better position to reduce their economic dependence on the Republic of South Africa (RSA), and thus to meet one of the primary objectives of the organization. Morever, as a result of planned improvements, the SADCC member states should be able to reduce their total transport costs with consequent savings in scarce foreign exchange and significant economic benefits to the region as a whole.

There are five major networks or transport "corridors" within the region. The so-called Northern Corridor links the region's interior, via the Tanzania-Zambia Railway (TAZARA) and the Tanzania-Zambia (TANZAM) Highway, with the port of Dar es Salaam. The Nacala rail system consists of a single track rail line between the port of Nacala, Mozambique, and Malawi. A third system of rail, road and oil pipeline, the Beira Corridor, includes a rail line between Zimbabwe and Beira (the Machipanda line) as well as a line between Malawi and Beira. (The line from Beira northward to Malawi includes a major spur which connects to the coal producing province of Tete in Mozambique.) A fourth system radiates from the port of Maputo, with rail links to Zimbabwe, Swaziland and the northeastern Transvaal in South Africa. Finally, the Benguela rail line which runs from the port of Lobito, Angola, through Zaire constitutes an important fifth regional transport corridor.

The TAZARA rail line connecting Zambia with the port of Dar es Salaam, the jugular of the so-called Northern Corridor, has come to play a crucial role in the movement of Zambian overseas trade. The line also carries goods from southern Zaire and plans are underway for Malawi to increase significantly its use of this northern route to the sea. A description of TAZARA and its actual capacities is presented in the following section. TAZARA's capacity is then compared to those of other corridors to highlight the specific benefits the TAZARA system offers to Southern Africa.

1.2 TAZARA

TAZARA was built between the years 1970 and 1975 with the assistance of the People's Republic of China. The link played a crucial role in facilitating the movement of Zambian goods at a time when the movements via Angolan and Mozambican routes were made difficult because of political disturbances.

Historically, Zambia's overseas trade had used two routes. The first of these, the Benguela railway, passed through what was then the Belgian Congo (now Zaire) to the port of Lobito in Angola. The second route passed from Northern Rhodesia (Zambia) into Southern Rhodesia (Zimbabwe) and then into Mozambique to connect with the port of Beira.

From the Zambian copper fields, where the majority of exports originate, the ports of Lobito and Beira are at a distance of 2,437 and 2,400 kms respectively. Given the virtually equal distance to the two ports in terms of inland haulage, one would expect the cargo to be equally split between the corridors. However, even though Lobito's closer proximity to the European markets meant that it had an advantage over Beira in total route distance, the majority of Zambian copper throughout the 1950's and 1960's flowed through Beira, not Lobito. This routing choice was a result of a complicated tariff arrangement between three separate railway administrations: the Railways of the Belgian Congo, Rhodesian Railways, and the Railways of Beira (Caminhos de Ferro de Beira). Under the terms of an agreement signed in 1958 the three railway authorities lowered their tariff to make Beira port cheaper than Lobito. The motivating force behind this agreement was Rhodesian Railways which wanted to maximize the transit cargo flowing over its lines. If copper from Zambia flowed to Lobito revenue to Rhodesian Railways would be lost. Similarly, the two other railway authorities were able to maximize their revenue. The agreement remained in force even after Zambian independence in 1965. In that year alone over 400,000 tons of Zambian copper passed via Beira.

The pattern of Zambian traffic only began to change in the early 1970's. By that time, increasing international pressure was being levied against the UDI regime in Rhodesia. Zambia appreciated the fact that if ties were cut between the two countries, an alternate route to the sea would be essential for the survival of its economy. Further, the route via Lobito had become unsafe because of the fighting between Portuguese and liberation forces in Angola. In 1967, Zambia and Tanzania initiated discussions on construction of a rail line linking the two countries. Work commenced on TAZARA in 1970. The building of the TAZARA rail link permanently altered the configuration of transport routing in Southern

Africa. The line provided a direct and closer route for Zambia to a sea port, while also serving southern Zaire and providing access to Rwanda and Burundi for their overseas trade. In addition, the rail link has significantly contributed to the development of southern Tanzania by providing a transport infrastructure to that part of the country. More recently, because of the closure of the Malawi-Nacala rail route, a growing percentage of Malawi's trade is being shipped north through Lake Malawi, hauled by road to Mbeya in Tanzania and moved by TAZARA and the TANZAM highway to Dar es Salaam port.

TAZARA passes through only two countries and is jointly owned and managed by them: Tanzania and Zambia. From a transport operations perspective, TAZARA offers better coordination and efficiency than the other routes where three separate systems would normally have to be traversed.

Since the line opened in 1976, TAZARA has moved the majority of Zambian overseas trade. The line is optimally placed to handle the traffic from the northern SADCC countries as well as other non-SADCC member states.

A detailed analysis of TAZARA's operational capabilities will be examined below. First, however, a review of the other systems is presented in order to assess their potential in meeting the needs of the SADCC countries which also use TAZARA.

Other Corridors

Three of the other corridors--Nacala, Beira and Maputo--are located in Mozambique. The last corridor is situated in Angola. The poor economic situation in Mozambique, exacerbated by continued security difficulties from anti-government guerillas, has severely affected the country's transport operations. Thus the transport corridors have been operating at well below potential and now require considerable foreign assistance before they will function optimally for the region's needs. The same argument applies to the Benguela railway and Lobito port in Angola.

A. Nacala:

The Nacala corridor system mainly serves traffic to and from Malawi through Mozambique. The railway line is also important for the movement of Mozambican exports of tea and cashews from the provinces of Nampula and Niassa. In addition, between 1973 when the Zambian-Rhodesian border was closed and until TAZARA was opened in 1976, Nacala handled some Zambian cargo.

The 615 km-long rail link between Nacala and the border of Malawi is currently being upgraded as a priority SADCC initiative with the assistance of foreign donors. Phase One of the rehabilitation between Nacala and Nampula (about 215 kms), which began in 1983, was financed by Canada, Portugal and France and is now completed. Phase Two, between Nampula and the border, is underway. The total cost of the second phase is $233.0 million and is fully subscribed by commitments from Canada, Portugal, France, EEC, UK, Finland, Italy and Mozambique.

Security problems, poor maintenance of the line resulting from insufficient foreign exchange for the provision of spare parts, as well as a lack of skilled manpower and management, have resulted in the rail line being closed since 1985.

The line is expected to reopen by late July 1987, at which time one train per week will be run in each direction. This movement will slowly increase to 4 trains per week by 1988 in each direction. The resulting annual capacity of 150,000 MT in each direction per year represents approximately one third of Malawi's annual 1986 overseas trade in terms of tonnage. Upon completion of the rail project in 1989, the carrying capacity of the line will be well over 1.5 million MT per annum.

The port of Nacala is also being upgraded to develop a container terminal with Finnish assistance. At a cost of $28.0 million, the project is due for completion at the end of 1989. Current capacity of 15,000 Twenty Foot Equivalent Units (TEU) containers will increase to 35,000 TEU's by project end. The condition of the general cargo berth at Nacala is good with equipment repair the most urgent concern. At this finest natural deep water harbor in Africa, dredging is not necessary. Shipping opportunities should be greatly expanded once the traffic begins to flow and the security of the corridor is maintained. Total capacity is now, and will continue to be, sufficient to handle all of Malawi's needs as well as those of Mozambique.

However, in the short- and medium-term (i.e., over the next two to five years), Malawi is only expected to route between 60 and 70% of its traffic via Nacala, sending the rest via the Northern Corridor to Dar es Salaam. The development of the northern route provides some contingency should Nacala not be able to perform sufficiently as a result of operational or security difficulties.

B. Beira:

The Beira corridor, as it has become known, is a series of railways and roads and a pipeline that connect Zimbabwe and other interior countries with the port of Beira. The port links by rail and road with the Zimbabwean border at Mutare and by rail to Malawi. This latter rail line also provides access to Mozambique's sizeable coal fields at Moatize.

Currently, the direct rail link to Malawi is closed and rehabilitation work is not expected to begin until 1989. The link will not play a role in the regional transport system until the 1990's.

The link to Zimbabwe, however, is already being upgraded as a joint effort between National Railways of Zimbabwe (NRZ) and Caminhos de Ferro de Mozambique (CFM). The completion of this rehabilitation is expected by the end of July 1987.

Future plans for rail upgrading include technical assistance for CFM-Centre, as well as provision of rolling stock and locomotive power. Continued track rehabilitation is also included as an essential element in the overall program to increase the line's capacity.

Current capacity on the line is 850,000 MT per year in either direction. Upon completion of the track improvement project in July, capacity will increase to 1,250,000 MT per year in either direction. In practice, because of security and operational problems (primarily lack of motive power), the actual operating capacity is 425,000 MT per year in either direction. This figure is expected to improve dramatically with the reintroduction of 11 USAID-financed rehabilitated locomotives. Delivery of these locomotives should begin in July 1987 and be completed by the end of October 1987.

The Beira-Mutare rail link is currently being used by Zimbabwe (200,000 MT per annum); Malawi (40,000 MT of sugar per annum via Tete by road and then on to rail at Harare); and Zambia (40,000 MT of copper per annum). It is anticipated that the Zimbabwe cargo will increase, as will exports of Zambian copper. Malawian traffic should increase moderately. The use of Beira port for Zambian copper represents a shift away from the port of East London in South Africa, and provides a safety net to Dar es Salaam port for this cargo. Zambia now ships about 80% of its copper exports via Dar es Salaam and 20% through Beira.

The road link between Zimbabwe and Beira, currently being rehabilitated by the Zimbabwe Government with funds provided by the African Development Bank (ADB), has the potential to carry 1.0 million MT annually. The corridor also includes a pipeline between Beira and Mutare (just inside the Zimbabwe border) which currently pumps about 0.6 million MT yearly of crude oil imports for Zimbabwe, representing 90% of Zimbabwe's total import requirements.

Theoretically, the design capacity of the port of Beira is 5 million MT, although it presently handles just over a million MT, including petrol, oil and lubricant (POL) products. In the past, the poor condition of equipment, inadequate management, as well as security problems, resulted in the diversion of traffic away from this port to other routes. However, with the first phase of track rehabilitation near completion and the commitment of the Zimbabwe and Mozambican governments to protect the line, the trend seems to be reversing. The increased throughput of Zimbabwean container traffic (cotton, asbestos, tobacco) as well as Zambian copper are prime examples.

Projects under way include repaving of the quayside and the construction of a roll on-roll off (RORO) multipurpose terminal. Management and technical assistance from the Port of Amsterdam will begin in 1987.

At a Conference of Donors at Brussels in October 1986, projects costing nearly $200.0 million were identified for Phase I of the 10-Year Beira Corridor Development Plan (1986-1995). Projects include further rehabilitation work on the rail line and road links, the provision of cargo handling equipment, improvements to the electricity supply system, the rebuilding of berths 2 to 5, channel dredging, and the construction of warehouses. More than 90% of funding was secured, mainly from the EEC (about 50% of the total), the Netherlands and Scandinavian countries. USAID participation is in the form of a grant of $5.54 million obligated in FY 1985 to assist the Mozambique Department of Ports and Railways (DNPCF) in the Ministry of Transport and Communications to rehabilitate 11 locomotives, provide technical assistance, train railway workers, improve workshop facilities, repair track and provide rail line repair equipment.

In summary, in the short-term, the Beira Corridor will be the most important link for the movement of Zimbabwean cargo. It will be of secondary importance for Zambia and Malawi until such time as the rail link from Nacala to Malawi is reopened and the northern route for Malawi is operating. Beira could also provide port access for Botswana in an emergency situation, although the route through Zimbabwe to Maputo would be more practical and efficient for Botswana traffic.

C. Maputo:

The Maputo port transport system is considered the main alternative to South African routes for overseas traffic for the southern SADCC countries. It serves southern Mozambique, Swaziland and Zimbabwe (southern and western parts), as well as the northeastern Transvaal in South Africa and Botswana. In 1986, approximately 500,000 MT of Zimbabwe's external trade and 505,000 MT of Swaziland's external trade passed through Maputo. Zimbabwean traffic destined for Maputo currently passes via South Africa by traversing the border at Beitbridge and connecting with the Mozambican system at Ressano Garcia.

There are three rail connections with Maputo port. The link between Zimbabwe and Maputo that follows the river border and is known as the Limpopo line is 534 kms long. Closed to commercial traffic since 1984, the line is currently being rehabilitated with the assistance of the United Kingdom and is expected to be reopened in January 1988. Capacity will be developed to handle 2.0 million MT of cargo per year.

The second route, 88 kms long, links Maputo with South Africa. This route has been completely rehabilitated and currently carries over 1.5 million MT per annum. Principal commodities include coal, sugar, citrus and steel from both South Africa and Zimbabwe.

The third link connects with Swaziland and is 78 kms long. The line is in poor condition and is frequently closed because of security problems. Nonetheless, the line carried approximately 500,000 MT of cargo in 1986.

The port of Maputo is in good condition, particularly in regard to its specialized handling facilities for citrus, coal, containers, sugar and steel. British management assistance is being provided to the sugar, steel and container berths; a South African loan is financing technical assistance and physical improvements to the coal terminal facilities; and the Italian Government is considering assistance to help improve port operations.

Major projects include the development of a bulk facility and the rehabilitation of the coal facilities. Dredging, both through emergency programs to deepen the entrance channel and later on a routine basis, is important to ensure the future viability of the port. To date, however, no donor has made a commitment to fund this activity. Projects on the Maputo system total over $700 million with over $247 million already committed from donors. Current port throughput is 2.2 million MT per annum and existing

capacity is 7.0 million MT. Once the full port upgrading program is completed, annual capacity should increase to 12.0 million MT.

D. Lobito (Benguela):

The Lobito corridor serves mainly Angola and Zaire and, potentially, northern Zambia. The corridor is not served by a road link at present. The 1,340-km Benguela railway line has a capacity of about 3.6 million MT per annum which has been reduced to about 0.25 million MT per year in each direction because of poor track conditions, limited rolling stock and insurgency problems. Limited traffic from the Benguela railway has resulted in under-utilization of Lobito port which theoretically is designed to handle 2.3 million MT of cargo per year. For the period up to 1990, small scale development of the port of Lobito (at a total cost of about $120 million of which $3.0 million is secured) and rehabilitation of the Benguela Railway (total cost about $182 million; secured financing $8.0 million) is scheduled to take place. A donor conference for the Lobito system was held in Lusaka in May 1987, but funding is still far below needs. Indeed, the program is seriously constrained by the lack of foreign financing and the poor security situation. Zambia, Zaire and Angola are making efforts to effect moves that would ensure reopening of the corridor by 1990.

E. Summary and Conclusions:

From a review of the capacity and condition of other SADCC transport systems, it is possible to draw the following conclusions. First, within the next five years, no system other than TAZARA will be able to provide efficient, cost-effective transit with sufficient capacity for Zambian cargo. Equally, Malawian trade will depend substantially on access to this route. Tanzanian cargo will rely, and the further development of the economy in the southern regions of Tanzania will depend, heavily on the continued improved performance of TAZARA.

TAZARA is the key to the stable economic development of the northern SADCC countries. Its development will also assist non-SADCC countries, particularly Zaire, Rwanda and Burundi, in providing efficient transit for overseas cargo.

1.4 Status of TAZARA-Related Projects

The initial goal of rehabilitating the TAZARA corridor was gradually to increase the capacity of both Zambia Railways and TAZARA so as to enable the two railway systems to carry all of the corridor's traffic. In an overall sense, TAZARA enhances SADCC efforts to improve SADCC's Northern Transport Corridor,

which also includes the Malawian Northern Transport Corridor. The TAZARA link provides access to the port of Dar es Salaam which alone is able to serve the immediate needs of this northern part of the region. SADCC's efforts have thus culminated in efforts to improve the Dar es Salaam port transport system. A description of these improvements follows.

A. Dar es Salaam Port:

Dar es Salaam is an important regional port for the neighboring landlocked countries of Burundi, Malawi, Rwanda, eastern Zaire and Zambia. Current port traffic is estimated at 1.3 million MT per year (1986), although current working capacity is about 2.1 million MT. It is expected that with the current rate of upgrading activities, capacity can be boosted to about 2.5 million MT by 1989. This will then increase incrementally with new investment (the theoretical design capacity of the port is in excess of 4.0 million MT).

The long-standing bottlenecks experienced at Dar es Salaam port are a result of weak management, poor physical infrastructure, a narrow entrance channel and obsolete navigational aids. Corruption has also been a problem.

Projects totalling $203.8 million have been identified for the period 1986-1992, with major donors concentrating on the rehabilitation of the Kurasini oil terminal and the all-purpose berths, in addition to technical assistance to the Tanzania Harbor Authority (NORAD); construction of three berths and a container terminal (IDA); construction of grain handling facilities (Netherlands); purchase of container handling equipment (Finland and Denmark); and purchase of copper handling equipment (Sweden). Thus far, funded projects total $126.3 million. The major constraints to throughput at Dar es Salaam port in the short-term will be the entrance channel, which is in need of dredging and which will limit vessel size and the productivity level of operations.

Major activities which still need to be funded include:
1. Channel dredging;
2. Construction of a container terminal;
3. Construction of a tug berth;
4. Purchase of general cargo handling equipment; and
5. Purchase of a floating crane.

B. Malawi Northern Corridor:

A World Bank-coordinated project involves the Federal Republic of Germany, the Netherlands, EDF, USAID and ODA. The aim of the project is to enable Malawi to have access

to Dar es Salaam port via Lake Malawi and via road to TAZARA. The plan is to make use of Malawi-operated cargo centers at Mbeya and Dar es Salaam in Tanzania. The project started in 1984 and was mainly a response to the closure of the Beira and Nacala routes. This route is not meant to be a substitute corridor for Beira and Nacala, but will be supplementary to them until they are fully operational. The corridor is approximately 45% cheaper than the routes presently used to the ports in South Africa.

AID's $10.5 million component of the project involves improving the maintenance port at Monkey Bay and the ports of Chipoka and Chilumba (all on the lake) together with procurement of such major items as generators, gantry cranes, railway tankers and tanktainers in Malawi and Tanzania. The project is due for completion at the end of 1989.

TAZARA's traffic forecasts for Malawian cargo, based on combined probability forecasts which are included in a German consultancy report on the corridor, estimate total Malawi Northern Transport Corridor traffic to be about 318,000 MT by 1995.

C. Zambia Railways:

The World Bank's Fourth Railway Project, involving ADB, SIDA, IDA, Belgium, USAID and KFW, includes assistance to Zambia Railways for track improvement, spare parts for rolling stock, signalling and telecommunications equipment, workshop tools and equipment, training, technical assistance and spares for the rehabilitation of diesel electric locomotives. USAID is funding the procurement of $10.0 million in spare parts for the locomotive rehabilitation program.

The current demand for traffic (1986/87 forecast) for Zambia Railways is about 5.2 million MT, of which 63% is local traffic, 23% is imports and exports and 14% is transit traffic.

1.5 Conclusion:

A review of the systems available for transporting goods over the various lines indicates that TAZARA is serving a unique market within southern Africa, namely Tanzania, Zambia, southern Zaire as well as Rwanda and Burundi. None of the other transport corridors is sufficiently developed at the moment to serve the requirements of Zambian and Tanzanian overseas exports and imports. Looking at the primary alternative systems, Beira and Lobito are the major competitor ports for this cargo.

In the case of Beira, only moderate amounts of cargo from the Zambian market are likely to flow through the port. Moreover, Beira will only be considered for contingency purposes for this traffic.

The potential for the Benguela line to handle large volumes of Zambian and Zairean cargo is unlikely to be realized in the forthcoming five years.

In terms of this project, it is important to remember that when Zambian goods flowed through the ports of Lobito and Beira, the TAZARA link did not exist. TAZARA now represents the closest and cheapest outlet for Zambian cargo in the 1980's and beyond.

Further, it is unlikely that Zambia would encourage the use of other routes for Zambian traffic because TAZARA's revenues would be reduced. Thus, the same principles for revenue maximization that applied to Zambia in the 1950's and 60's will apply to TAZARA today.

In conclusion, TAZARA represents the most logical route for Zambia, Zaire and Tanzania. The alternate ports of Nacala, Beira and Lobito simply will not be sufficiently developed within the next five years to compete for the projected cargo demand. Assistance to TAZARA is vital for the future economic development of Zambia and Tanzania, with the potential to support other SADCC countries, particularly Malawi, in the near term.

2.0 PROJECT RATIONALE

2.1 Introduction

The description of the regional transport system and its requirements over the next five years provided in the previous section illustrates the critical and unique role of TAZARA in providing access to the sea for landlocked SADCC countries. For Zambia, the southern part of Tanzania and, increasingly, Malawi, the most important and safest link to the outside world for exports and imports is the Northern Corridor route of TAZARA and the port of Dar es Salaam. Other regional systems will not have the capabilities to serve these portions of the SADCC market to the same degree, in terms of cargo volume, as TAZARA.

The current carrying capacity on the TAZARA line is inadequate to meet the projected demand of 1.9 million MT by 1991 and the 2.9 million MT demand projected by SATCC for 1995. By 1991, regular demand for freight traffic is expected to rise by almost 100% to 1.9 million MT from 988,000 MT in 1985/86.

Therefore, in the immediate to near term, TAZARA offers the best route for Zambia, southern Tanzania and Malawi. Zambia's potential use of Mozambican routes is limited. It would be impractical for southern Tanzania to use another route and uncertainty regarding the Mozambican route to Nacala requires that Malawi have a double option. In addition, because certain commodities cannot be moved through Nacala, Malawi will depend entirely on TAZARA for a certain percentage of its international trade even when the Nacala line is fully operational.

2.2 Problems Faced by TAZARA:

Problems affecting the TAZARA transport system have been outlined in detail by SATCC and TAZARA in the TAZARA 10-Year Development Plan, part of which has been upgraded to an emergency plan in anticipation of a diversion of traffic from the South African railway systems.

In brief, the most important problems of the rail system include:

a. insufficient locomotive power;
b. lack of rolling stock;
c. need to rehabilitate local quarries;
d. lack of mechanical track maintenance;
e. rescue crane equipment;
f. problems of landslides;
g. lack of sufficiently skilled management.

The plan proposes 22 projects, all of which have been incorporated into SATCC's Programme of Action. Seven of these projects are permanent way and construction projects, six are signalling and telecommunications projects, seven are motive power, rolling stock and mechanical equipment projects and two are general management and training projects.

Of the 22 projects presented to donors for funding, seven projects are either unfunded or only partially funded. Projects designated in the 10-Year Plan as ME:1 (provision of locomotives) and GM:1 (technical assistance) are among the unfunded projects. AID assistance under this project is proposed to address the problem of insufficient locomotive power and critical management and operational problems.

2.3 Specific Donor Interests and Commitments:

Sweden is assisting in the procurement and rehabilitation of rolling stock and is providing financing for equipment in the local quarry; equipment for mechanical track maintenance is being supplied by Switzerland, the EEC and Austria; Finland has provided funds for rescue equipment; and the ADB has undertaken a study on the problem of landslides. Finally, beginning in 1986, the Nordic countries have supplied a technical assistance team of three people for three years to assist TAZARA in project coordination. The exact funds as of June 1987 that have been provided for these projects is presented below.

A. SIDA is contributing $5.5 million to the quarries rehabilitation project; $4.0 million for rail burn repairs; $10.0 million for purchase of 375 goods wagons. TAZARA is currently negotiating an additional $28.0 million from SIDA to cover the remaining gap in goods wagons as defined in the 10-Year Plan.

B. Switzerland has obligated $1.7 million and is negotiating the provision of another $3.6 million for mechanized track maintenance.

C. The EEC has provided $12.0 million for the rehabilitation of quarries. Rehabilitation activities will stretch through mid-1992. The EEC is providing $3.0 million for wheel lathes, $1.5 million for mechanical equipment for workshops and $8.0 million for mechanized track maintenance.

D. Austria has signed an agreement to provide $3.87 million worth of equipment for track maintenance.

E. Finland has provided $2.0 million for procurement of cargo handling equipment for goods depots, as well as $6.6 million for rescue cranes and rerailing equipment.

F. The ADB is strongly interested in financing the Permanent Rectification of Landslides Project. Although TAZARA lists the cost as about $12.0 million, ADB feasibility studies indicate a cost of approximately $50.0 million. The ADB is also interested in funding a $0.4 million railway link between TAZARA and Mpulungu Port, Zambia.

G. The Nordic Group currently has three technical advisors assigned to TAZARA headquarters for the coordination of donor assistance and the implementation of ongoing projects under the 10-Year and Emergency Plans. The cost of this assistance is $2.0 million for a period of three years (1986-1989).

H. Norway has committed $0.7 million for construction of training facilities.

I. DANIDA has provided $0.5 million for backup high frequency radio links and has also begun a $0.8 million project to provide solar power panels for TAZARA and $0.1 million in teleprinters. Although DANIDA has made no new pledges recently, TAZARA's emergency plans and the 10-Year Plan are being studied further at DANIDA headquarters and additional assistance is possible.

TAZARA has indicated that the estimated gap in financing to cover projects under the Emergency Plan is $179.6 million. As indicated above, donor programs are addressing in whole or in part many of the problem areas faced by TAZARA. The significant gaps in this large donor effort are the provision of locomotives, managerial assistance, workshop improvements, and the provision of spare parts and signalling equipment.

The most serious problem that now thwarts efforts to increase TAZARA's carrying capacity is the lack of locomotive power, followed by a need to improve certain aspects of head office and workshop management and workshop operations.

In 1980, the FRG provided a $30.0 million soft loan for the purchase of 14 General Electric (GE) diesel electric locomotives built under a GE license granted to Krupp of West Germany. The locomotives are currently used on the high gradient areas of the line. More than half of this loan has been converted to a grant and the possibility of further assistance to TAZARA is being reviewed.

2.4 Proposed Response by AID

The proposed AID-funded project will address the following major problem areas:

(1) Inadequate Locomotive Power:

TAZARA's locomotive capacity is inadequate for the projected increase in demand. The constraint is partly physical but in part results from managerial weaknesses of the authority, particularly in the area of maintenance.

To meet the traffic demands forecasted for the 1991-1995 period, TAZARA will not only need new locomotives, but must also raise the availability rate of its locomotive fleet. Thus, related problems such as shortages of spare parts, workshop facilities and equipment for the maintenance of locomotives must also be addressed.

In addition, improvements in TAZARA's maintenance and operating capabilities will require some attention to the Authority's human resource base which is currently inadequate, both in numbers and skill levels, to carry out the changes that will be required to meet increased demand.

Specifically, availability of motive power, defined as operable locomotives not sidelined for major repairs or in the shop for routine maintenance, has declined to an unacceptable level of 46% in 1986. Currently, the mainline fleet consists of 30 Chinese locomotives, 13 Chinese shunters, 26 Chinese locomotives retrofitted with MTU engines and 11 GE-Krupp diesel electric locomotives, making a total of 80. At 46% average availability, only 37 locomotives are available for use on any given day.

A major problem for TAZARA has been the recognition that the original Chinese locomotives were inadequate, not powerful enough mechanically and badly suited for conditions in the rail line (see Annex E). Thus, to improve total motive power in 1979, TAZARA embarked on a program to repower some of its locomotive units with more powerful, higher quality engines. This move resulted in an improvement in availability and reliability (measured in terms of reduced downtime). In addition, with the assistance of the FRG, TAZARA purchased 11 GE/Krupp 3200 hp locomotives in 1984. With this addition to the fleet, combined with technical assistance at the locomotive maintenance workshop, the re-powering of Chinese locomotives, and assistance to improve track conditions, TAZARA was able to haul well over 900,000 MT of goods in 1985/1986, compared to 750,000 MT in 1980.

Locomotive capacity, however, is still not adequate for the current and projected freight and passenger increases. TAZARA haulage figures indicate that in the last two quarters of FY 1985/86, over 20% of the goods offered for pickup were left behind or diverted to other transport routes mainly because of inadequate motive capacity.

According to TAZARA, low availability of locomotives has also restricted passenger services to a critically-inadequate two round trip runs a week between Dar es Salaam (Tanzania) and Kapiri Mposhi (Zambia), compared to six in 1979/80. TAZARA plans to increase passenger service to 6 round trip runs per week by 1992.

Given these requirements, it is evident that increased locomotive power is necessary. SATCC projections indicate that, to meet 1991 demand under the TAZARA 10-Year Plan, a minimum of 45 high-powered (3200 hp) locomotives must be available per day. If an emergency program to divert traffic from South Africa to Dar es Salaam is considered, the number of locomotives required climbs to between 59-79. TAZARA would, therefore, need to increase the number of high-powered (3200 hp) locomotives by 17 at the minimum. Moreover, adequate spare parts are needed to maintain all the locomotives at their optimum capacity. Ultimately, TAZARA plans to set aside the 58 older Chinese DFH2 locomotives which have not been repowered for shunting, local routes, spares and standby units (see Annex E).

(2) Inadequately Trained and Inexperienced Management Staff at Head Office and Workshops:

Since commencement of operations, TAZARA has been provided with technical assistance by the Chinese Railway Expert Team (CRET), through aid financing by the Chinese Government. Although the original 2,000-member CRET were intended to assist with policy, management and operations in general, its efforts have been concentrated on locomotive maintenance due to unforeseen failures of the Chinese-furnished diesel hydraulic locomotives.

Following the addition of 14 new GE/Krupp locomotives in 1985, the number of Chinese on the team has been drastically reduced. The current CRET agreement, which runs through 1988, provides the assistance of 150 persons for, primarily, railway line operations in such fields as civil and mechanical engineering and engineering and traffic operations, including signaling.

There is a gap between what exists and what is needed in the way of managerial and technical expertise at headquarters and the regional workshops. In 1984, the Canadian Pacific Consulting Services firm (CPCS) undertook a study of the operational and staffing needs of TAZARA. The study identified areas within TAZARA that need improvement, reorganzation and technical assistance. These include:

- financial management;
- marketing demand analysis;
- corporate planning;
- investment analysis;
- traffic operations;
- wagon and locomotive utilization;
- manpower development and operations performance evaluation;
- development of workshop procedures; and
- formulation of monitoring procedures and development of production, quality and material controls.

SATCC included these needs among its priorities in the TAZARA 10-Year Development Plan--they are identified as Project GM:1 - Technical Assistance to TAZARA Headquarters.

(3) Inadequate Workshop Facilities:

Availability of locomotives is affected by the frequency and duration of scheduled and unscheduled maintenance and repair work. For both types of work, the length of stay in the shop is a key factor in the management of locomotive downtime. Due to a lack of appropriate tools and equipment and inadequate training of maintenance personnel, locomotives are in the shop for servicing for 15-20 days of work compared to a norm of 5-8 days for routine overhaul.

Other factors contributing to long maintenance times include: 1) the necessity to do maintenance work in work space that does not segregate light repair and inspections from major overhauling; 2) low labor productivity; 3) general congestion at workshops; and 4) lack of quality, inventory and production controls.

In a continuing effort to improve operations of the railway, a number of measures have been introduced by TAZARA during the past three years. These include: (a) changes in operational and administrative procedures; (b) tariff adjustments; (c) strengthening of the audit and administrative function; (d) drawing up of investment programs for a 10-year period; (e) systematic reduction of the work force to match the level of operations; and (f) a consultancy to review accounting procedures and recommend improvements.

The proposed AID project concentrates on three major areas. The first is to procure new locomotives to increase haulage capacity. The second is to provide sufficient spare parts and equipment to maintain the new locomotives as well as the current fleet of GE/Krupps. Thirdly, tools and equipment will be provided to ensure that workshops can adequately maintain the diesel electric fleet. Fourth, the workshop at Mbeya will be extended to permit more comprehensive maintenance on diesel

electric locomotives. Finally, the project provides technical assistance and training aimed at helping solve TAZARA's more immediate needs in management, maintenance and operations.

This project meets the criteria set forth in the Southern Africa Regional Transport Development PID. In accordance with the criteria presented in section IIC of the PID, entitled Project Strategy, the Dar es Salaam Corridor Project meets the required project selection criteria as follows:

(1) The project addresses the constraints of high costs and unpredictable transport availability by making more locomotive power available, reducing the length of time goods are in transit and increasing the efficiency of management and control systems. The shorter, less expensive and direct route to the sea reduces the high cost of the import/export sector.

(2) The project will result in substantial savings of foreign exchange spent on transporting the overseas trade of Malawi, Zambia and, possibly, Zimbabwe goods to Dar es Salaam Port.

(3) Internal rate of return calculations for the project exceed 25% over a ten-year period.

(4) Complementary projects within the Dar es Salaam Transport Corridor network are being coordinated by the World Bank and a high degree of commitment already exists from other donors.

(5) A low rise in recurrent costs stemming from the project will be offset by user fees for rail usage and will result in net earnings for TAZARA.

(6) The project is expected to favorably affect medium- and long-term economic growth along the rail line and within the landlocked countries as a group by stimulating both internal and international trade and by reducing transport costs.

(7) The project is a very high priority within the SADCC Emergency Programme of Action.

(8) The prospective security situation along the TAZARA rail line, both within Zambia and Tanzania, is excellent.

SATCC Policies and Priorities

One of the key objectives of SADCC is to reduce the region's economic dependency particularly, though not exclusively, on the Republic of South Africa (RSA). Of first priority towards that end is the rehabilitation, upgrading and maintenance of the existing transport facilities to cope with existing and potential traffic demand. SATCC aims to achieve this objective through capital investment, training, improved management and operational coordination.

In selecting TAZARA as a high priority project in its Programme of Action, SATCC considered, among others, the following criteria:

(1) The project's contribution towards a reduction of dependence on the RSA;

(2) The regional importance and impact of the project, especially for the landlocked member states;

(3) The anticipated effects of the project on the overall reduction of transport costs and improvement of services in relation to forecasted traffic flows; and

(4) The project's potential for promoting trade between member states.

2.5 Project Relationship to USAID Assistance Strategy

SARP's Regional Development Strategy Statement (RDSS) and the recently proposed U.S. Economic Initiative for Southern Africa (SAI) emphasize that a development effort led by private sector initiatives to expand competitive production and find export markets, cannot succeed as long as the basic regional transport infrastructure is not efficient and cost-effective. The SADCC Programme of Action, which considers the impact of traffic flows on the SADCC rail system, gives these sectors the highest priority. The RDSS calls for support of the transport portion of the Programme of Action.

In its resumption of bilateral assistance to Tanzania, the initial U.S. program will focus on providing spare parts for the trucking industry and repairing major road systems. The local currency generated will be used to repair feeder and market roads that would have direct links to the TAZARA rail line.

CONCLUSION AND SUMMARY

The proposed AID project addresses a critical area of concern for the upgrading and optimal performance of the TAZARA rail line. In so doing, the project will help SADCC achieve its objective of reducing reliance on transport through South Africa. Support for TAZARA, as opposed to other transport corridors, at this time is based on its inherent cost-effectiveness for several SADCC members, as well as the inability of other systems to handle the traffic to and from Zambia and, in part, Malawi, over the next five years. Furthermore, other corridors (primarily through Mozambique) already have considerable funding commitments from other donors. Emphasis has been placed on locomotive procurement because the lack of motive power is the most serious problem

affecting the optimal performance of TAZARA which remains unfunded. Technical assistance for specific levels of TAZARA's operation will help ensure that the maximum benefit of the equipment is realised. Finally, the project's projected economic rate of return of 30% clearly justifies the investment in the project on economic grounds.

3.0 PROJECT DESCRIPTION

3.1 Overview and Strategy

a. Overview

The necessary components of TAZARA's physical infrastructure are basically in place, but need minor rehabilitation. The management is dynamic, the operational structures of the Authority are relatively sound and the two governments which own TAZARA are committed to its success.

The AID-financed project responds to TAZARA's immediate need for additional locomotive power by providing new and more highly-powered diesel electric locomotives to carry increased tonnages of cargo. At the same time, the project will strengthen the institutional capacity and operational efficiency of TAZARA in repair and maintenance of its own fleet of locomotives and rolling stock by providing spare parts, equipment, construction and on-the-job training. To increase overall management efficiency and minimize wastage, long- and short-term technical assistance and training will be provided to headquarters, regional maintenance workshops and operational divisions.

Increased locomotive power will assist TAZARA in increasing its carrying capacity from 988,000 MT per year in 1986 to 2.1 million MT per year by 1991. The project will also enhance TAZARA's capacity to maintain locomotives as well as improve the efficiency of overall operations through technical assistance, staff training and development.

It is projected that, by the end of the project in 1991, there will be a near doubling in the volume of cargo hauled annually, from 988,000 MT in 1986 to 1.9 million MT; capacity will be increased to 2.1 million MT to meet the anticipated demand in 1993. The daily average locomotive availability rate will increase from the 1986 level of 46% to 65% and average wagon turnaround time will decrease from the 1986 rate of 35 days to 20.

To achieve its targets, the project provides funding for five mutually-supportive components: (a) the purchase of a total of 17 new high-power diesel electric locomotives (eight in the second year and, depending upon evaluation findings and recommendations, an additional nine in the third year), spare and repair parts; (b) construction to extend the locomotive workshop at Mbeya, Tanzania to provide more complete servicing of diesel electric locomotives; (c) the provision of equipment and tools largely for the Mbeya workshop and some basic tools for the

other two workshops; (d) long- and short-term training and staff development; and, (e) 216 person-months of short- and long-term technical assistance in railway operations, financial management, staff development, diesel electric locomotive engineering, traffic demand and forecasting, inventory control and tariff policy determination.

b. Project Strategy:

The project strategy is to increase TAZARA's overall locomotive availability in order that it can haul its projected increases in tonnage. Initially, the project concentrates on training, improving the management and operational efficiency of TAZARA through transfer of appropriate technology and relevant skills by providing long- and short-term technical assistance to the mechanical engineering, finance, planning, personnel, supply and traffic departments. By the time 8 new AID-financed diesel electric locomotives will have arrived at TAZARA during the third year of the project, it is expected that: 1) new cost accounting procedures will have been established, computerized and used as the basis for determining operating costs and tariff structure; 2) production, quality and inventory control systems will have been developed and will be used in the workshops; 3) 180 of TAZARA's management staff will have attended the first part of the refresher courses; 4) at least 4 long-term participants will be in training at U.S. universities; and, 5) a diesel electric locomotive engineer will be on the job training staff at Mbeya, overhauling and repairing existing diesel electric locomotives. The project will be evaluated in the third year, at which time a decision will be made, based on the work of the financial technical assistance to date, the analysis of projected traffic in the regional corridors, the progress and effects of on-the-job training on the maintenance and repair of locomotives, the level of total efficiency and productivity at the workshops as well as TAZARA's and SATCC projections of need, as to whether additional funds are to be expended for the purchase of the nine additional locomotives proposed for project financing.

3.2 Project Objectives

A. Project Goal

The goal of the project is to support the development of a strong economic foundation for growth in Southern Africa.

B. Project Purpose

The Project's purpose is to strengthen and expand the carrying capacity and improve the operational efficiency of TAZARA.

C. End of Project Status

By the end of the four-year life of this project, the following conditions are expected to exist:

a. a near 100% increase in cargo hauled annually, i.e., TAZARA's carrying capacity increased from 988,000 MT in 1986 to 1.9 million MT in 1991.

b. a 40% increase in the locomotive availability rate i.e., average locomotive availability increased from 46% in 1986 to 65% in 1991;

c. A decrease in average wagon turnaround time, i.e., a decrease in average turnaround time of wagons (Dar es Salaam-Kapiri Mposhi) from the current average of 35 days to 20 days by 1991.

D. Project Outputs

The following outputs will be achieved by the project:

a. 17 additional new diesel electric locomotives put in service and being maintained;

b. 11 existing GE/Krupp diesel electric locomotives overhauled and 2 damaged diesel electric locomotives repaired and operating;

c. A maintenance program operating efficiently for the entire fleet of 30 diesel electric locomotives;

d. Mbeya workshop remodelled and in use to maintain diesel electric locomotives only and store diesel electric locomotive spare parts;

e. Improved maintenance procedures developed and implemented for diesel electric locomotives;

f. Rail system operating procedures developed and implemented including those for overall planning, traffic forecasting, demand analysis, and tariff setting;

g. Cost accounting procedures, computerized and in use as basis for determining operating costs;

h. Data on operating costs and revenue position presented to TAZARA management as basis for a realistic tariff structure;

i. Production, quality and inventory systems control established;

j. 600 TAZARA artisans, technicians, engineers and workshop supervisors receive on-the-job training;

k. Improved performance of 180 TAZARA management staff through refresher courses;

l. 6 long-term participants trained in critical railway management and operations areas;

m. 20 TAZARA finance department staff receive short-term training in financial management.

E. Project Inputs:

1. AID contribution ($45,950,000);

a. Locomotives, with an additional 20% equivalent of capital value in spare parts, and related services ($31,567,000).

Seventeen 3200 hp diesel electric locomotives with additional 20% equivalent of capital value in protective and consumable spare parts such as filters, brushes, contact tips, brake shoes, wear plates, alternators, generators, rectifiers and radiators; and 45 person-months of long and short term technical services.

b. Spare parts for GE/Krupp diesel electric locomotives and related services ($2,033,000):

Spare parts for the 4-year overhaul of 11 GE licensed Krupp manufactured U30C diesel electric locomotives and repair parts for repair of 2 damaged GE/Krupp diesel electric locomotives, to include gasket kits, turbo charger units, repair kits, bearings, etc.; plus 48 perons-months of technical assistance.

c. Tools and Equipment for workshops ($1,800,000):

Tools and equipment for TAZARA's three workshops.

d. Workshop Construction ($400,000):

Foreign exchange component of the extension of Mbeya workshop including construction of annexes for demonstration and storage rooms such as turbo servicing fixtures, turbo assembly and disassembly equipment, gantry cranes, rail lines, etc.

e. Technical Assistance ($3,436,000):

A total of 72 person-months of long-term technical assistance and 96 person-months of short-term assistance for headquarters, plus office equipment and supplies for these advisors.

f. Long- and Short-term Training ($1,075,000):

i. Long-Term $300,000:

144 person-months of long-term training in the United States for 6 participants leading to MSc degrees in planning, management accounting and transport economics.

ii. Short-term ($775,000):

60 person-months of in-country training; 10 person-months of third country training; 25 person-months of U.S. training; and 60 person-months of financial training;

g. Monitoring and evaluation ($150,000):

Two scheduled evaluations and periodic financial reviews and audits;

h. Contingencies and Inflation ($5,489,000):

Contingencies and annual inflation compounded have been calculated at 8% and 5% respectively.

2. TAZARA's Contribution ($3,868,000):

Local costs for construction of Mbeya workshop, staff salaries and benefits, training support, equipment, vehicle operations and maintenance, office and building space, utilities and supplies (7.7% of total project costs).

3. Other Donor Contributions ($204,000):

Technical assistance from Nordic staff currently working at TAZARA, who will work closely with AID-

financed technical experts in planning, mechanical engineering, staff development, evaluation of project and equipment (0.43% of the costs of the project).

3.3 PROJECT COMPONENTS

The proposed project will finance the commodities and services necessary to carry out activities for expanding TAZARA's carrying capacity while improving management, staff and operational efficiency.

The project components to be funded by AID are:

A. Locomotive Power Component:

Low locomotive availability has a negative effect on overall rail services, especially carrying capacity and operating costs.

The 1986 locomotive availability rate of 46% will not be sufficient to haul the projected 1.9 million MT of goods per year by 1991. Eight high-powered (3200 hp) diesel electric locomotives will be purchased with project funds during the second year of the project for delivery in the third year. An additional nine will be purchased in the third year of the project if evaluation findings, recommendations and traffic projects indicate an additional need for motive power for TAZARA. All orders of locomotives will be accompanied by 20% equivalent of capital value in spare parts, sufficient to maintain the locomotives at their optimum level during the first 5 years. Each of these locomotives will be able to haul 950 MT of cargo per trip over the 2% gradient parts of the line.

Project funds will also be used to purchase spare and repair parts for the 11 functioning and two damaged GE/Krupp diesel electric locomotives currently in TAZARA's fleet. The spare parts are needed for the 4-year overhaul due July 1988. The overhaul is required to maintain the diesel electric locomotives running at their optimum level. Altogether the provision of 17 new locomotives and spare parts for 30 locomotives will increase TAZARA's efficiency to permit a total hauling capacity of 1.9 million MT per year by 1991.

To receive, put on line and maintain the diesel electric locomotives while providing on-the-job training for engineers and maintenance personnel at Mbeya, 36 person- months of long term mechanical engineering technical assistance and 9 person-months of short term assistance will be secured by project funds

as part of the contract for purchase of locomotives from the manufacturer. The diesel electric locomotive engineer will provide diesel locomotive maintenance staff with enhanced skills required to maintain and service the locomotives. In addition, the project will provide 36 person-months of technical assistance for the overhaul of the existing diesel electric locomotives and 12 person-months of services for parts inventory management.

Inputs to Component:

AID contribution ($33,600,000)

a. 17 Diesel electric locomotives at $25,500,000;

b. 20% equivalent of capital costs for spare parts at $5,100,000;

c. Spares and repair parts for GE/Krupp diesel electric locomotives at $1,000,000;

d. 93 person-months of technical assistance at $2,000,000.

TAZARA's contribution ($500,000 equivalent in local currency):

TAZARA's contribution to the locomotive power component includes salaries of TAZARA staff in the Mbeya workshop who will maintain project-financed locomotives and repair and maintain the GE/Krupp locomotives. It also includes the salary of one counterpart for a contract engineer, office space, support staff, office supplies, training facilities, operation and maintenance of equipment and vehicles.

Outputs from Component:

a. 17 new diesel electric locomotives put into service.

b. 11 existing GE/Krupp diesel electric locomotives overhauled, 2 repaired and operating.

c. Maintenance program and on-the-job training for diesel electric locomotives established and functioning at Mbeya workshop.

d. Maintenance program institutionalized for entire diesel locomotive fleet.

B. Construction Component

TAZARA has two large workshops, one at Dar es Salaam and another at Mpika, fitted with identical equipment for the maintenance of Chinese diesel hydraulic locomotives and wagons. The smaller workshop at Mbeya is used solely for the maintenance of the GE/Krupp diesel electric locomotives and to store spare parts that TAZARA purchased in 1984-85. Greater maintenance and efficiency will be achieved if all of current and additional diesel electric locomotives are serviced at Mbeya. Very little of the equipment in the two larger workshops can be utilized or transferred to Mbeya for use on the diesel electric locomotives. The Mbeya workshop will be extended and equipped for heavy repair work in order to accommodate servicing of all the current and future diesel electric locomotives.

The proposed expansion would consist of an area of about 1,460 square meters (27 m x 54 m) for heavy repair work on diesel electric locomotives. The flooring will be provided with three built-in run-through tracks. Each track will have an under-floor pit arrangement similar to those in the existing facility. The proposed expansion will be adjacent to the north wall of the existing light-repair shop. The proposed workshop will be serviced with an overhead 30-ton gantry crane for removal and replacement of major components.

The structural and architectural features of the proposed expansion will conform with the design of the existing structures.

Adjacent to the north wall of the proposed workshop, another additional structure will house storage of parts, materials and a demonstration classroom to conduct necessary training sessions for repairs on locomotives. The proposed addition would be an area of about 1300 square meters (24 m x 54 m).

Design Cost Estimates and Construction

Architectural design of the proposed extensions shall be steel structural components, with walling of roof sheeting. Floors shall be built to withstand movement of locomotives. TAZARA will commission an experienced and qualified local firm to carry out design work and prepare the Invitation for bid (IFB) documents for the proposed construction.

Tanzania has both design and construction capacity to design and build such types of structures. The following cost estimates have been made on a cost per square meter basis based on a review made by AID engineers to compare the costs of construction of similar structures built in Tanzania during the last six months and on a review of the costs of local and imported construction commodities.

i. Proposed Workshop structure, total estimated area 1,460 square meters.

Estimates @ $400 per sq. mt.	$ 584,000

ii. Storage area and demonstration classroom, total estimated area 1,300 sq. mt.

Estimates @ $400 per sq. mt.	$520,000
Sub-total costs	US$1,104,000
Other costs	$ 246,000
Total Costs	$1,350,000

Inputs to Component:

AID contribution (US$400,000):

AID contribution toward construction costs shall be limited to the procurement of the foreign currency portion of building materials and fixed equipment for the workshop such as rail lines, overhead gantry cranes, demonstration equipment, etc.

TAZARA's Contribution (US$900,000 in local currency equivalent):

TAZARA will finance the local currency cost of construction which includes services for engineering, architectural drawings and services, locally available construction material, construction supervision, labor and furnishings.

Other Donor Contribution (US$50,000 equivalent):

Nordic advisors will provide assistance for the review of engineering and architectural drawings and supervision of construction.

Outputs from Component:

a. Mbeya workshop extended and in use to maintain diesel electric locomotives, store spare parts and used as a demonstration and training room for locomotive technicians;

b. Maintenance program developed and instituted for entire diesel locomotive fleet at Mbeya;

c. Mbeya workshop designated and functioning as center for servicing all diesel electric locomotives.

C. Equipment and Tools Component:

The CPCS and the Parsons Brinkerhoff International, Inc. (PBI) (see Annexes E and F) reports identified critical shortages and lack of minimum equipment and tools at the workshops as contributing to low productivity in the workshops and low locomotive availability.

Project funds will be used to purchase the minimum required tools and equipment for the workshop at Mbeya. The diesel electric locomotive supplier and GE will provide the list of minimum tools required to maintain the project-funded diesel locomotives and overhaul 11 and repair 2 GE/Krupp diesel locomotives in service. These include brake system component testing equipment, valve seat grinding set, crankshaft deflection, bearing installation tools, scraper, etc. A partial list of the equipment and tools to be purchased is in Annex M.

Inputs to Component

AID Contribution ($1,800,000):

a. $500,000 for GE/Krupp tools and equipment required to maintain the diesel electric locomotives at Mbeya.

b. $1,300,000 for basic minimum tools and equipment required for the three workshops to maintain TAZARA's total locomotive fleet. (Mbeya $450,000; Dar es Salaam $200,000 and Mpika $650,000).

TAZARA's Contribution ($700,000 equivalent in local currency):

TAZARA's contribution to the tools and equipment component will include salaries of TAZARA supply management staff, other support staff, office space and storage areas.

Output from Component

a. Tools and equipment received at all workshops and being utilized.

b. 11 existing GE/Krupp diesel locomotives overhauled, 2 repaired and all operating.

c. Maintenance program underway for entire diesel locomotive fleet.

d. Improved maintenance procedures developed and being implemented for diesel electric locomotives.

D. Technical Assistance Component

In additiona to the locomotive related technical assistance described above, a total of 168 person-months of technical assistance will be provided in four separate contracting modes.

1. Financial Management Assistance (42 person-months):

42 person-months of short-term financial and accounting assistance through an IQC between AID and a U.S. firm will be provided to the Finance Department of TAZARA. The technical assistance will enable the department to develop procedures for making a complete and accurate record of all expenditures, prepare regular management accounts and information, institute cost systems as a basis for the conduct of accurate and reliable tariff review, develop an effective internal audit capability, automate its financial management services, prepare a staff assessment study for the department, develop financial training plans, train and ensure that adequate staff and skills are available to manage an efficient and effective Finance Department. The team will report to the Financial Manager of TAZARA and each specialist will have a TAZARA counterpart.

2. Long-Term Financial Management Assistance

(36 person-months):

36 person-months of long-term services of a management accountant procured through a personal services contract (PSC) will be provided to the Finance Department of TAZARA. The contractor will work under the supervision of the Finance Manager and will work in collaboration with the short-term

experts provided by the financial IQC. The technical assistance will enable the department to:

a. ensure accounting information is properly prepared for the region;

b. manage the data processing function for the department in the region;

c. direct preparation of all management information, supervise budget preparation and cost analysis and implement data processing functions necessary for TAZARA's operations;

d. assist management, when required, in the preparation of budgets, and collect and summarize the budgets for their approval;

e. ensure that the data processing equipment used by the department in Tanzania Region is properly maintained;

f. formulate training programs for and ensure regular on-the-job training of all subordinates.

3. Railway Operations Management Assistance

(90 person-months):

The services of a railway operations and management firm will be secured through competitive procurement for the total of 102 person-months. The large firm may wish to sub-contract parts of these technical services to a smaller firm. The services to be provided are:

a. 3 years of long-term services of a railway management specialist will be provided to the Mechanical Department at headquarters in Dar es Salaam to help organize all three workshops and develop a comprehensive program of technical system controls. The specialist will arrive in the first year of project implementation, will be located at Dar es Salaam and, with a TAZARA counterpart, will work closely with all management and workshop staff to develop and implement the relevant production and inventory controls, workshop planning and fleet assignment, and to develop a quality control system that will interface smoothly with planning, purchasing and operation of the equipment fleet. The specialist will report to the Deputy General Manager.

The resident railway management advisor will also plan for and coordinate 66 person-months of short-term technical assistance (including scheduling and the preparation of scopes of work) as described below.

b. 6 person-months of short-term assistance in railway management to establish and implement production, inventory and quality control systems.

c. 24 person-months of short-term technical assistance in economic planning, market analysis and traffic forecasting and demand analysis which will be provided to the Planning Department during the life of project.

Severe gaps in data have been identified in traffic operations including goods tracking operations, wagon utilization and interchange policies with other railways. The services of a transport economist experienced in railway problems will be provided to conduct traffic surveys, determine traffic demands, review traffic performance, translate traffic forecast into operational indices, conduct an annual review, in collaboration with the finance and traffic departments, of operating costs and advise means of establishing an appropriate tariff structure. The economist will also advise on proposals for investment projects intended to achieve the objectives of traffic operations. She/he will report directly to the Manager for Corporate Planning. The transport economist will be supported by other proposed short-term technical assistance i.e., a railway market analyst and traffic forecasting and demand analyst on an as-needed basis.

d. 9 person-months of short-term engineering technical assistance over the life of project will be provided to the Corporate Planning Department of TAZARA. The engineer will report to the Manager of Corporate Planning and, working closely with traffic and engineering departments, will translate the transport demand with appropriate operational indices and plan for the mechanical engineering needs of TAZARA. She/he will conduct an assessment of the existing capacity of mechanical equipment vis-a-vis the prepared plan, review all proposals for investment in mechanical equipment and all other matters related to new equipment with manufacturers and donors. The engineer will also advise on formulation of corporate strategy and policies appropriate to mechanical engineering. The engineer will work closely with a counterpart identified by TAZARA in the Planning Office and train at least one other person on the mechanics of developing such relevant policies and strategy for TAZARA's investment and operations.

e. 15 person-months of short-term assistance will be funded to assist in TAZARA's training and personnel development. The individual will function at TAZARA's headquarters and report directly to the Deputy General Manager. The Chief of Personnel will be the counterpart. The specialist will develop in-service, short-term management training other than that provided by the Financial IQC, and develop the long-term U.S. participant training program.

Inputs to Component:

AID Contribution ($3,436,000):

a. 42 person-months of short-term financial and accounting assistance including data processing experts at $22,000 per month, $924,000;

b. 36 person-months full-time PSC in accounting at $135,000 per year, $405,000;

c. 36 person-months full-time of a railway management expert at $256,500 per year, $ 769,000; and

d. 54 person-months (pm) of short-term technical assistance at $22,000 per person-month, $1,188,000 consisting of:

- 6 pm for development of rail management control systems (production, quality and inventory)
- 9 pm for economic planning
- 9 pm for traffic forecasting and demand analysis
- 6 pm for market analysis
- 9 pm for wagon utilization/control and mechanical engineering systems
- 15 pm for management training

e. Office equipment and supplies such as portable computers, duplicating machines and other supplies for the Planning, Traffic, Mechanical, Supplies and Personnel Departments at $150,000.

TAZARA's Contribution ($800,000 equivalent in local currency):

TAZARA's contribution to the technical assistance component includes salaries of counterpart staff, office space, support staff, office supplies and equipment, operation and maintenance of equipment and vehicles.

Outputs from Components:

a. Inventory, production and quality controls established at TAZARA workshops. The short-term technical assistance in railway management maintenance systems will establish these systems initially at Mbeya and later at other workshops.

b. Maintenance program instituted for entire diesel locomotive fleet.

c. Rail system operating procedures developed and implemented including overall planning, traffic forecasting, traffic demand analysis, automated accounting procedures, cost analysis, rail tariff review and setting. The review and establishment of a realistic marginal operating cost will lead to a review of tariffs and development of a tariff structure that is related to operating costs. At the conclusion of the financial technical assistance, the data obtained, analysis performed

and policies recommended will be considered in the decision to provide the additional 9 locomotives to TAZARA.

E. Training Component:

Training consists of four parts with the objective of increasing TAZARA workers' efficiency and productivity.

1. On-the-job Training:

This element of the training program will be conducted mainly at the Mbeya workshop by the contract diesel electric locomotive engineer who will maintain and service the diesel electric locomotive fleet. Through daily on-the-job training and trouble shooting the staff of the Mbeya workshop, consisting of engineers, technicians and artisans, will be trained in mechanical and electrical trade courses, (Module 1-12 of the TAZARA training manual), and the first cycle of

workshop manager, supervisor, storekeeper and assistant courses. This process is expected to take approximately 1-24 months depending on the previous experience and aptitude of each staff member.

2. Management Training

This element of the Project will assist in improving productivity and efficiency by developing and carrying out management training programs to improve work-related behavior (e.g., communication, decision making, supervision, planning, discpline, attendance and problem solving). The experiential, participatory and problem solving approach to training that will be used will be conducted by a cadre of five trainers from TAZARA's school at Mpika, a team of experienced trainers from the SADCC transport and management institutions in the region such as the Institute of Development Management in Tanzania, and American management consultants. It will be aimed at 180 of TAZARA's mid- and upper-level managers. The staff to be trained will be divided into five groups of 30-40 each. Each group will undertake three training sessions, approximately 8-10 months apart, over the life of the project. On-the-job follow-up will be provided between training sessions by management and training consultants. A separate cycle of management training consisting of 3 seminars will also be developed for TAZARA's dozen most senior executives.

3. Participant Training:

Long- and short-term participant training will be geared to TAZARA's technical needs. 144 person-months, leading to six Master's degrees, will be provided in the areas of most immediate need. At least two senior accountants, one corporate planner and one mechanical engineer will earn degrees. Short-term programs and study tours in the U.S. and third countries will be provided for managers, technicians and trainers in such areas as railroad operations, maintenance and management, pricing, statistics and information services, computer programming and utilization and training of trainers. When practical, consultants will be brought to TAZARA to conduct training.

4. Short-Term Work Study:

Tours for lower-grade Mechanical Engineering Staff.

The objective of the tours are to: (a) provide broader-based experience from which these workers can

increase their skills, knowledge and commitment; and, (b) provide a reward for job performance. Groups of five or six workers will be taken to view operations of other workshops they would normally not have the opportunity to see. For example, workers at Mbeya or Mpika would be given a one-week tour of the Dar es Salaam operations or operations of railroads in neighboring SADCC countries such as Zambia Railways, National Railways of Zimbabwe or Botswana Railways. If these study tours prove successful, they will be expanded with the assistance of other donors.

Inputs to Component:

AID contribution ($1,075,000)

a. On-the-job training by a diesel electric locomotive engineer at Mbeya (see inputs to locomotive purchases);

b. Executive and in-service Management training ($320,000) consisting of:

   i. Training Management Advisors, 15 person-months, U.S. and other;

   ii. Training Specialist, 15 person-months, regional expert paid in foreign currency;

   iii. Supplies and Equipment, $75,000 worth of training materials and supplies.

c. Participant training ($460,000)

   144 person-months of training leading to 6 MSc degrees.

d. Short-term work study ($20,000)

e. Short-term specialized accounting studies provided by experts from regional institutions such as the Institute of Finance Management (IFM), the Eastern and Southern African Management Institute (ESAMI) and the Institute of Development Management (IDM) ($200,000).

TAZARA's contribution ($365,000 equivalent in local currency):

a. Salaries and benefits for the artisans, engineers and technicians at Mbeya who will be trained, support staff, other equipment, etc. ($500,000 equivalent);

b. Executive and in-service management training, ($190,000 equivalent) for support staff, equipment supplies, salaries of 5 TAZARA teachers who will be the lead trainers and local currency costs of management consultants and trainers from ESAMI, IFM and IDM;

c. ($140,000 equivalent) for salaries of staff participant trainees, office supplies, support staff, etc.;

d. Short-term work study ($15,000 equivalent);

e. Equipment and supplies ($20,000 equivalent).

Outputs from Component:

a. 600 maintenance staff, engineers, artisans, mechanics, technicians, inventory clerks and supervisors trained at Mbeya workshops and storage shops;

b. 11 GE/Krupp diesel electric and 2 damaged GE/Krupp locomotives given 4-year overhaul and repaired, respectively;

c. Improved maintenance procedures instituted for all diesel electric locomotives;

d. At least 180 mid- and upper-level TAZARA managers trained;

e. A core of 5 staff members from the TAZARA training school (Mpika) trained as management trainers;

f. The management training program institutionalized as part of TAZARA's staff development program;

g. Overall improvement in management efficiency and productivity;

h. 6 TAZARA employees receive Masters' degrees in critical fields;

i. 25 person-months of short-term training received in U.S.;

j. 10 person-months of short-term training received in third countries;

k. 120 person-months of training received at TAZARA through services of consultants;

l. Improved staff efficiency and productivity;

m. 30 study tours involving at least 150 lower-level Mechanical Engineering Department staff such as train operators, artisans, and mechanics.

4.0 PROJECT FINANCIAL PLAN

A. Project Cost

The financial plan is based on 1987 prices. The budget is based primarily on technical design and cost estimates made by the PBI IQC team in their review of costs, training, technical assistance, project monitoring and review and cost for commodities listed in Annex M. Annual inflation of 5 percent compounded is included. Contingency to allow for accidental ommissions and errors in estimating costs amounts to approximately 8% in total.

i. Total Project Cost:

The total Project cost is $50,022,000. The foreign exchange component totals $46,154,000 of which AID is contributing $45,950,000 or 91.9% of the total Project cost. TAZARA is contributing $3,868,000 or 7.7% ot the total budget and other donors will contribute $204,000 or 0.4% of total budget.

Costs of locomotives, equipment, tools, spare parts and training are based on estimates obtained from U.S. suppliers and include ocean transportation. Costs of construction and local labor and materials are based on market prices obtained from TAZARA, Tanzania and Zambia Government sources and suppliers.

The cost of each new locomotive includes one week of technical assistance from the manufacturer. The additional 20% capital cost equivalent for spare parts will cover spares for the first five years of maintenance.

ii. AID's Contribution:

The AID contribution to the project will provide $45,950,000 or 91.9% of the total project cost. Table 3 provides a summary of AID's contribution as follows: locomotives, spare parts and related services $33,600,000; workshop tools and equipment $1,800,000; construction $400,000; training and staff development $1,075,000; technical assistance $3,436,000; project monitoring and evaluation $150,000; contingency and inflation $5,489,000. Budget details for each component are contained in Budget Table 7.

TABLE 1

SUMMARY OF AID's CONTRIBUTION

ITEM		COST IN US$
17 3200 hp diesel electric locomotives		25,500,000
Spare parts at 20% equivalent of costs of locomotives		5,100,000
45 person-months of technical services for on-the-job training and other technical work for diesel electric locomotives		967,000
Spare parts for 11 and repair parts for 2 GE/Krupp diesel electric locomotives presently in TAZARA's fleet		1,000,000
36 person-months of Technical services for overhaul of diesel electric locomotives and 12 person-months of services for inventory of parts		1,033,000
Tools and equipment for workshops		1,800,000
Mbeya workshop extension		400,000
Other managerial and technical services (long-term)		1,174,000
Other managerial and technical services (short-term)		2,112,000
Office equipment associated with Technical Assistance		150,000
Long- and Short-term training		1,075,000
Evaluation and financial audits		150,000
SUBTOTAL	$	40,461,000
Contingency and Inflation	$	5,489,000
TOTAL	$	45,950,000

Distribution of the AID contribution by funding category is summarized in Table 4.

TABLE 2

USE OF AID FINANCING

Funding Categories	Percentages
Locomotives, spare parts and related services	73.1
Workshop tools and equipment	3.9
Construction	0.9
Training and Manpower Development	2.3
Technical Assistance	7.5
Project Monitoring and Evaluation	0.3
Contingency and Inflation	11.9
	100.00

TABLE 3

SUMMARY OF TAZARA'S CONTRIBUTION IN EQUIVALENT US$

CATEGORY OF ITEMS	ESTIMATED COST
* Locomotives, spare parts and related services	500,000
* Tools and Equipment	700,000
** Construction	900,000
Training	365,000
Technical assistance including office supplies and equipment	800,000
Project Monitoring and Evaluation	100,000
SUBTOTAL	$ 3,365,000
Contingency at 8% and inflation at 5% per annum compounded	$ 503,000
TOTAL	$ 3,868,000

* Consists of salaries of counterpart staff, staff involved in maintenance and repair of diesel electric locomotives and on-the-job training in the servicing of locomotives and for support and supply management staff, etc.

** Amount has been approved by the Board as a line item in TAZARA's 1987/88 budget.

B. Obligation Plan

U.S. grant funds are proposed for obligation by FY as follows in millions of dollars.

	FY 1987
TOTAL	45,950

Total cost estimates by funding source and project component are presented in Table 6 while Table 7 provides a yearly breakdown of expenditures for each principle project activity.

iii. TAZARA's Contribution:

TAZARA's contribution to the project of $3,868,000, (see Table 4) represents 7.7% of the total cost. It includes the salaries of counterpart TAZARA staff, support staff, training, office equipment, the major financing for the construction of a workshop and operation and maintenance costs of the Mbeya workshop. TAZARA's contribution will be in Tanzanian Shillings.

iv. Other Donor Contributions:

Other donor contributions to the project, equivalent to $204,000 or 0.4% of project costs, cover support from Nordic-financed technical assistance already working at TAZARA in planning, mechanical engineering, maintenance, construction, and training.

TABLE 4

COST ESTIMATES AND FINANCIAL PLAN
(in US$ 000)

		USAID		TAZARA		OTHER		TOTAL
		FX	LC	FX	LC	FX	LC	
I.	LOCOMOTIVES/SPARE PARTS	(33,600)	-	-	(5 0)	-	-	(34,100)
	17 GE locomotives	25,500	-	-	-	-	-	25,500
	Technical Assistance for 17 weeks (inclusive)	-	-	-	-	-	-	0
	20% equivalent of capital costs for spare parts for locomotives	5,100	-	-	-	-	-	5,100
	3-year technical assistance at $256,300/year and 9 person-months of short term T.A.	967	-	-	-	-	-	- 967
	Local staff	-	-	-	500	-	-	500
	Spare parts for 11 and repair parts for 2 damaged GE licensed Krupp locomotives	1,000	-	-	-	-	-	1,000
	3-year technical assistance to repair GE/ Krupp and 12 pm of inventory assistance	1,033	-	-	-	-	-	1,033
II.	TOOLS/EQUIPMENT	(1,800)	-	-	(700)	-	-	(2,500)
	Workmen's tools (Dar, Mbeya and Mpika)	400	-	-	-	-	-	400
	Special GE tools (Mbeya)	300	-	-	-	-	-	300
	Special GE equipment (Mbeya)	500	-	-	-	-	-	500
	30-ton bridge crane and parts (Mbeya)	200	-	-	-	-	-	200
	Additional high-powered equipment (Mpika & Dar)	400	-	-	-	-	-	400
	Local staff/services	-	-	-	700	-	-	700
III.	CONSTRUCTION	(400)	-	-	(900)	(50)	-	(1,350)
	Heavy repair workshop for U30C	200	-	-	500	-	-	700
	2 new railroad run-through tracks and equipment	100	-	-	-	-	-	100

		USAID FX	USAID LC	TAZARA FX	TAZARA LC	OTHER FX	OTHER LC	TOTAL
	Demonstration and storage rooms	-	-	-	300	-	-	300
	Audiovisual equipment	50	-	-	-	-	-	50
	echnical assistance	50	-	-	100	50	-	200
IV.	TRAINING	(1,075)	-	-	(365)	(25)	-	(1,465)
	Executive management training	100	-	-	40	10	-	150
	In-service management training	220	-	-	150	5	-	375
	Equipment and supplies	75	-	-	20	5	-	100
	Long-term training (6 MSc degrees)	460	-	-	140	-	-	600
	Short-term training (seminars, study tours)	20	-	-	15	5	-	40
	Specialized financial management training at ESAMI for TAZARA staff	200	-	-	-	-	-	200
V.	TECHNICAL ASSISTANCE	(3,436)	-	-	(800)	(80)	-	(4,316)
a.	Long-term Technical Assistance	1,174	-	-	300	10	-	1,484
	Railway Systems Management Specialist to be located in Dar at $256,300/year for 3 years	769	-	-	300	10	-	1,079
	PSC Accountant to be located in Dar at average of $135,000/year	405	-	-	-	-	-	405
b.	Short-term Technical Assistance	2,262	-	-	500	70	-	2,832
	Materials/Production Systems Specialist (3 person-months @ $22,000/month)	66	-	-	25	10	-	101
	Work Planning/Quality Systems Specialist (3 person-months @ $22,000/month	66	-	-	25	10	-	101
	Wagon Control Utilization Mechanical Engineering Systems Specialist (9 person-months @ $22,000/month)	198	-	-	50	10	-	258
	Tariff Rate Review/Development Specialist (9 person-months @ $22,000/month)	198	-	-	50	10	-	258

		USAID		TAZARA		OTHER		TOTAL
		FX	LC	FX	LC	FX	LC	
	Transport Economist (9 person-months @ $22,000/month)	198	-	-	50	10	-	258
	Market Analyst (6 person-months @ $22,000/month)	132	-	-	50	10	-	192
	Training/Staff Development Specialist (15 person-months @ $22,000/month)	330	-	-	100	10	-	440
	Financial, accounting and data processing specialists (42 person-months at $22,000)	924	-	-	50	-	-	974
	Office equipment/supplies for Technical Assistants' use at TAZARA	150	-	-	100	-	-	250
VI.	PROJECT MONITORING AND EVALUATION	(150)	-	-	(100)	(20)	-	(270)
	Sub-total	40,461	0	0	3,365	175	-	41,001
	Contingency and Inflation	5,489	0	0	503	29	0	6,021
	TOTAL	45,950	0	0	3,868	204	0	50,022

TABLE 5

FINANCIAL PLAN OF U.S. CONTRIBUTION BY FY (EXPENDITURE)
(in US$ 000)

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL
I. LOCOMOTIVES/SPARES	1,718	14,924	16,738	220	33,600
Locomotives (17 diesel electric)	-	12,000	13,500	-	25,500
20% equivalent of capital costs for spare parts for locomotives	-	2,400	2,7 0	-	5,100
Spare and repair parts for GE/Krupp locomotives	1,000	-	- -	1,000	
Technical Assistance (new Locomotives)	293	229	247	198	967
Technical Assistance (GE/Krupp overhaul)	425	295	291	22	1,033
II. TOOLS AND EQUIPMENT	1,800	-	- -	1,800	
Special tools & equipment for diesel electric locomotives	1,800	-	- -	1,800	
III. CONSTRUCTION	350	50	- -	400	
Extension of heavy repair workshops with demonstration room and storage for diesel electric locomotives	200	50	- -	250	
2 new railway run-through tracks and equipment	100	-	- -	100	
Audiovisual equipment	50	-	- -	50	
Technical Assistance for Workshop Construction	-	-	- -	-	
IV. TRAINING	98	382	335	260	1,075
In-service management training	-	100	100	50	250
Executive management training (3 seminars)	10	20	20	20	70
Training equipment and supplies	5	30	30	10	75
6 long-term MSc training	30	150	150	130	460
30 study tours with 5 persons in each tour at $600 per tour	3	7	5	5	20
20 persons trained at ESAMI in accounting	50	75	30	45	200

		YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL
V.	TECHNICAL ASSISTANCE	1,016	1,070	856	494	3,436
a.	Long-term Technical Assistance					
	Railway Systems Operations Specialist	293	229	247	-	769
	PSC Accountant	125	135	145	-	405
b.	Short-term Technical Assistance ($22,000 per month)					
	Production ontrol System Specialist	22	22	22	-	66
	Quality Control System Specialist	22	22	22	-	66
	Wagon Utilization Specialist (Mechanical Engineer)	66	66	66	-	198
	Tariff Rate Review and Development Specialist	66	110	22	-	198
	Transport Economist	66	110	22	-	198
	Market Analyst	66	66	-	-	132
	Training/Staff Development Specialist	30	100	100	100	330
	Equipment for Technical Assistance use at TAZARA	150	-	-	-	150
	Revenue, Payroll Accountants and Computer Specialist	110	210	210	394	924
VI.	MONITORING/EVALUATION	15	25	55	55	150
	2 scheduled evaluations and audits	15	25	55	55	150
	Sub-Total	4,997	16,451	17,984	1,029	40,461
	Inflation at 5% per annum compounded; Contingency at 8%	327	2,131	3,000	31	5,489
	TOTAL	5,324	18,582	20,984	1,060	45,950

5.0 PROJECT ANALYSES

5.1 INSTITUTIONAL ANALYSIS

A. Legal Basis of TAZARA

The Tanzania-Zambia Railway Authority (TAZARA) was established in 1968 through a bilateral agreement entered into by the Governments of the Republic of Zambia and the United Republic of Tanzania. This agreement, which committed the two governments to jointly promote and support the development of a new railway line linking landlocked Zambia to the Tanzanian port of Dar es Salaam, was first modified in 1972 and again in 1975. Legislation enacted by both governments in 1975 established the legal independence of TAZARA from the control of either of the two governments.

In essence, TAZARA is an international corporate body which, on behalf of the two governments, owns the Tanzania-Zambia Railway line. The inter-governmental agreement governing the Authority explicitly empowers TAZARA to act as agent of the two governments in all matters relating to the design, manufacture, and acquisition of rolling stock, locomotives, train equipment, spare parts and accessories. TAZARA also has full authority to enter into agreements with donors, agreements to procure commodities, and to negotiate contracts with any party without reference to either of the two governments.

B. Governing Structure of TAZARA

The Council of Ministers, which consists of six ministers, three from each country, is the highest decision-making authority within the TAZARA hierarchy. It is empowered to approve changes and conditions of employment, development plans, capital works, construction of new branch lines, and to raise new capital. The existence of the Council as constituted precludes the need for any significant government involvement in the affairs of TAZARA outside the corporate body framework. Therefore, within a single legal framework, the Council has the mandate and authority to direct and control both the internal and operational affairs of TAZARA while ensuring that the policies and interests of the two governments are duly considered.

A Board of Directors, which consists of ten members, five from each country, is responsible for the policy, control, and management of TAZARA and is subordinate to the Council of Ministers. For any matter involving

agreement with, or the interest of any country other than Zambia and Tanzania, the Council has to delegate specific authority to the Board to enable it to act. The Council of Ministers meets three times a year and the Board of Directors quarterly.

The third tier in the governing structure is top management which includes the General Manager and the Deputy General Manager. They operate out of the Head Office in Dar es Salaam. This three-tiered governing structure in illustrated in Table 6.

C. Organization and Staffing

The agreement between the Governments of Zambia and Tanzania that created TAZARA embodies a policy of equitable distribution of facilities and operational activities, as well as benefits between the peoples of the two states. This distributional parity reflects the equal contribution and ownership of assets mandated by the bilateral agreement. Accordingly, the General Manager at the Authority's Head Office in Dar es Salaam is required to be a Zambian national with a Tanzanian as Deputy General Manager. The Chair of the Council of Ministers and Board of Directors rotates between nationals of the two countries. The Agreement also requires TAZARA to recruit, employ and train staff for the management and operation of the railway from each country on an equal basis, unless the Board specifically authorizes otherwise.

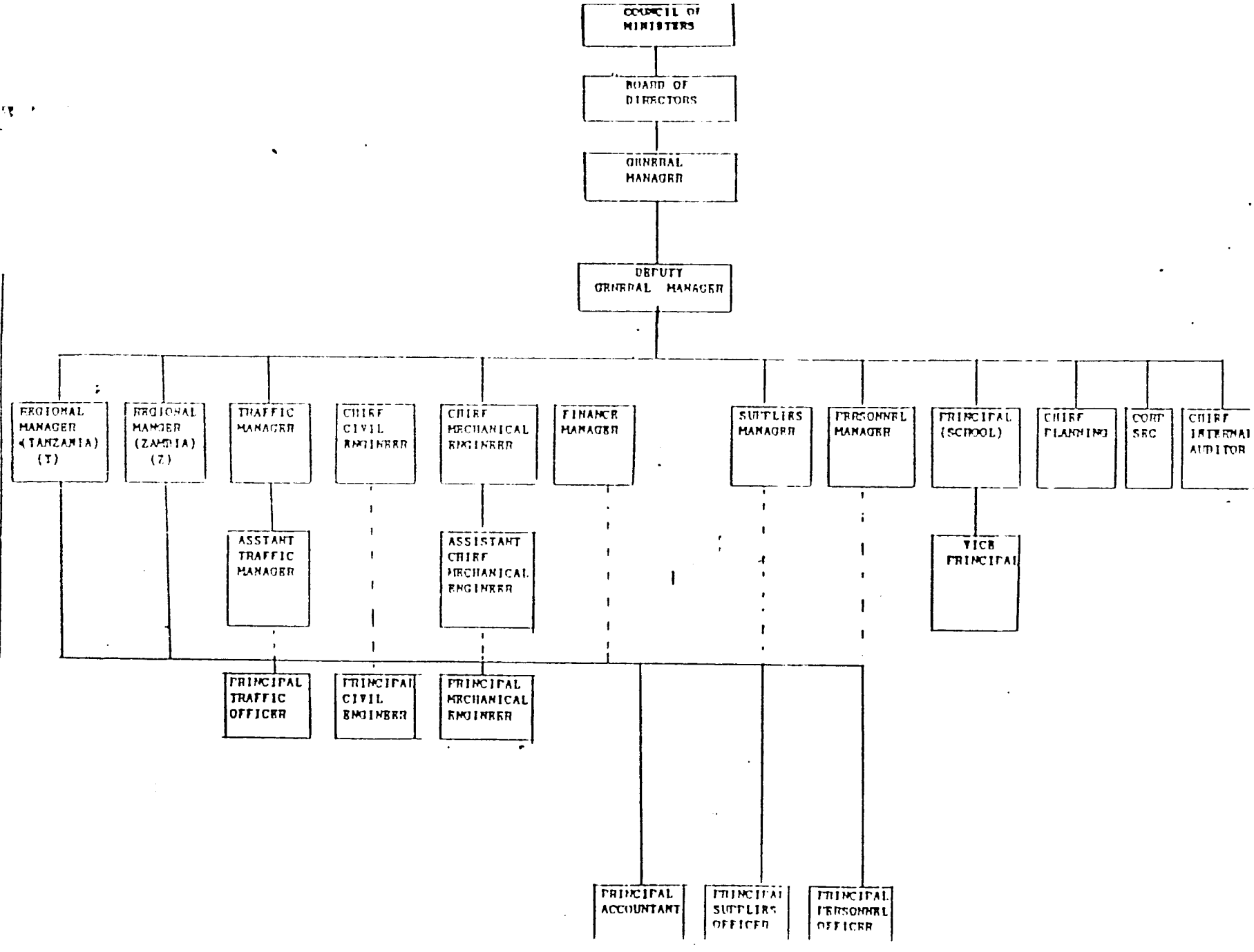
In Dar es Salaam, the Head Office is divided into nine functional departments and the head of each one reports to the General Manager. For operational purposes, the Railway is divided into two regions and has identical Regional Office headquarters in Dar es Salaam and Mpika, Zambia. Functionally, the two Regional Offices reflect the Head Office in terms of organization. In addition, they oversee two Construction Units who mainly construct sidings, staff houses and two quarries.

Finally, a Railway Training School is operated at Mpika, Zambia, and is responsible for training drivers, artisans, and other semi-skilled workers.

The nine functional departments of TAZARA's Head Office include:

Administration - comprised of the General Manager and Deputy General Manager.

GOVERNING STRUCTURE OF TAZARA



Corporate Planning - created in 1985, replacing the earlier Planning Department. Prepares quarterly reports, monitors implementation of the 10-Year Development Plan. Also houses the Nordic-funded Project (donor) Coordination Unit.

Corporate Secretary - provides legal advice and support to all the departments, senior management, the Board and the Council.

Traffic - responsible for train operations, marketing and sales. There are traffic operations departments in both regions, with each region divided into three traffic districts.

Civil Engineering - responsible for maintaining the fixed plant of the railway, especially the track, and also the signalling and telecommunications systems for safe and efficient operations of trains.

Mechanical Engineering - essentially a service department responsible for maintaining the motive power and rolling stock at the highest level of availability and reliability. In Tanzania, there is a main workshop at Dar es Salaam and wagon casual repair shed and locomotive depots at Mlimba and Mbeya. In Zambia, the main workshop is at Mpika with a wagon casual repair shop at Kapiri Mposni and a locomotive depot at Chozi.

Finance - responsible for preparing annual capital and operations budgets for estimating costs for overall financial management of the Authority and for maintaining accounting records. Prepares monthly expenditure reports.

Supplies - buys all supplies and materials for TAZARA and directs and controls the preparation of annual procurement requirements by the regional supplies and user departments. It also manages the main material stores at Kurasini (near Dar es Salaam) and Mpika.

Personnel - responsible for industrial relations, hiring of personnel, employment policy, staff development and training.

Internal Audit - converted from a small unit in the General Manager's office in 1986 to a full department with 18 staff positions. Every year it conducts passenger and freight revenue audits, audits the expenditures of the Head and two Regional Offices as well as the Training School activities, and witnesses year-end physical stock counts.

TAZARA currently employs about 6,500 people of whom approximately 240 are mid- to upper-level managers. About 90% of TAZARA's work force are employed in the Traffic and Engineering Departments. According to September 1986 statistics, the distribution of employees is as follows:

Head Office	157
Tanzania Region	3,269
Zambia Region	2,956
Training School	70
	6,452

D. Assessment

Several studies financed by donors have examined various institutional aspects of TAZARA. The most exhaustive was a three-month field assessment funded by TAZARA and conducted in 1984 by the Canadian Pacific Consulting Services called "The Operational and Staffing Study for Tanzania-Zambia Railway Authority". The capabilities of the Mechanical Engineering Department were examined in 1986 for KFW, the West German aid agency for capital assistance, while TAZARA's manpower and training needs were also explored in 1986 for NORAD. Finally, USAID/Zimbabwe contracted with Coopers and Lybrand Associates to conduct an "Analysis of TAZARA's Procurement and Commodity Management Arrangements" which was completed in May 1987 and is attached as Annex I.

The most serious institutional deficiencies identified by these studies include:

1. The limited authority of the Board of Directors requiring all key policy decisions on TAZARA's operations to be submitted to the Council for approval;

2. The horizontally-skewed organization of the Head Office which requires all the Department Heads and Regional Office Managers to report to the Office of the General Manager, thus inhibiting efficient management and timely decision making;

3. Ineffective supervision of workshop staff which has contributed to low workshop productivity, a low availability rate of locomotives and low levels of reliability of both locomotives and goods wagons;

4. The absence of effective management and control systems to:

   a) monitor the use and location of wagons and analyze movements to identify turnaround times, time out of service and delays at loading and shipping points;

   b) measure work output and worker performance;

   c) produce reliable statistical, financial and operational data, especially a costing system for formulating tariffs for passenger and freight services to permit profitability planning;

   d) conduct accurate and timely recording of expenditures.

5. Lack of an effective inventory accounting control system, financial accounting records and general management of information;

6. Shortages of staff and inadequately trained staff in workshop management, operations planning, especially traffic forecasting, transport demand analysis, revenue estimating, cost accounting, data processing, accounting and management information;

7. Excessive reliance on formal qualifications instead of experience for promotions;

8. Over-emphasis on classroom training and an absence of on-the-job training, especially in the Civil and Mechanical Engineering Departments and the Finance and Accounting Department.

E. Corrective Action Taken by TAZARA

In response to the numerous recommendations made by the Canadian Pacific Study, TAZARA has introduced the following changes to improve both management and operations:

1. Corporate objectives have been clearly defined;

2. An Accident Committee that reports directly to the General Manager has been set up whose purpose is to identify the real causes of derailments and make recommendations that management can then act upon;

3. The wagon record system at Kapiri Mposhi has been expanded to all major stations and a wagon numbering system compatible with the numbering system used by contiguous railways has been implemented;

4. The tariff structure has been simplified and made more flexible, and management now has the authority to set new tariffs without referring rate changes to the Board or Council.

5. Staff has been reduced by about 10%.

6. An Internal Audit Department has been established and a number of remedial actions recommended by the Tanzania Industrial Studies and Consulting Organization (TISCO) to rationalize the accounting and finance functions have been implemented.

7. A Corporate Planning Department has been created and has begun work on a 10-Year Corporate Plan which will include organizational and manpower development plans.

F. Other Donor Assistance

A number of other recommendations to improve institutional performance are being addressed by donor-funded technical assistance, as summarized below:

1. The Nordic Group:

Under Project GM:2, Manpower Development Planning and Training, of the TAZARA 10-Year Development Plan, NORAD has set up a coordinating unit in the Department of Planning to monitor and schedule all donor activities under the plan. The Unit will also prepare a strategy for manpower registration, a comprehensive manpower development plan and a strategy for manpower including organizing new manpower and training departments. The team will be in the country through 1989.

2. Federal Republic of Germany

To maintain and provide on-the-job training for TAZARA staff at Mbeya working on the GE/Krupp diesel electric locomotives, KFW of West German has provided the services of a locomotive mechanical engineer for 3 years. His contract will end in October 1987 and will be not be renewed. By all accounts of TAZARA

management and technicians at Mbeya, he has provided excellent training and maintenance for the staff at Mbeya and the U30C diesel electric fleet of locomotives. The project proposes to continue his function (as part of the locomotive supplies purchase contract) to train technicians on-the-job and maintain all the diesel electric locomotives at Mbeya including the 14 proposed in this project.

3. The Chinese Railway Expert Team (CRET)

As the retrofitting program for the Chinese locomotives has progressed and the GE/Krupp locomotives have arrived, the Chinese technical assistance presence has been reduced to 150 technicians. This team works largely in the Mechanical and Civil Engineering Departments advising staff on operational and technical matters concerning the Chinese wagons, coaches, telecommunication and signalling equipment and building and bridge maintenance. A small number of the team work in the Supply Department preparing specifications and orders for spare parts and equipment for the Chinese rolling stock and for equipment and tools still in use. The current 3-year CRET contract ends in 1989.

G. USAID Response

TAZARA has made significant progress in addressing serious performance impediments in its management and operations of the Railway. It has been responsive to recommendations made by institutional study teams. Current and planned technical assistance and training provided by other donors will further help to increase operational efficiency and management effectiveness. However, significant gaps still exist which AID proposes to address through this Project.

AID assistance to TAZARA will address priority manpower development and management needs that are not being met by the Nordic Group or other donors. A comprehensive program of technical assistance and long- and short-term training has been prepared by the Project Team and agreed to by TAZARA. It will address critical deficiencies in corporate planning, market analysis and demand projections, traffic operations, finance, including assistance with implementation of new accounting procedures and systems, costing systems, review of tariffs and charges, staff utilization and improved workshop operations. AID's proposed assistance is outlined in detail in the Training and Technical Analysis sections of this Paper as well as in Annex G - Training and Manpower Development and Annex Q - Scopes of Work for Technical Assistance.

5.2 SUMMARY OF TRAINING ANALYSIS

Training for TAZARA, which has been primarily on-the-job, has been provided by the Chinese Railway Expert Team (CRET), and by Zambian and Tanzanian supervisors. The amount of actual skill transference from CRET to TAZARA employees varies according to the efforts made by individual CRET members, their ability to communicate in English and Swahili and the time available.

In addition, the Chinese established a training school at Mpika, Zambia, in 1975. Currently there are 28 instructors and a total of 70 employees at the school. It has boarding facilities for 240 and a classroom capacity for 300 students. Since 1978, 1,700 students have been enrolled and 536 have been trade tested. Major weaknesses of the school are its lack of "hands on" training, and lack of collaboration with operational departments. The school is underutilized.

To date, TAZARA has devoted a significant amount of financial resources for training. Between 1979 and 1984, slightly over TSH 32 million was spent on training. In 1985-86, TAZARA financed the training of 29 staff for periods ranging from period of 3 months to 3 years - 16 in African training institutions and 13 overseas.

Despite these important efforts, TAZARA still has gaps in its skilled manpower at almost all levels. On the lower levels, there is low productivity and insufficient technical skills. There are insufficient management skills and practices in the middle- and upper-levels and insufficient high-level technical personnel in several key areas (i.e., accounting, computer programming, engineering, etc.).

Specific training needs vary with departments and job level. However, the most critical are the following:

1. More on-the-job training to reinforce and improve technical skills already acquired, develop analytical skills to identify and solve problems and develop skills in maintenance and management.

2. Improvement of productivity and motivation, particularly in the lower-scale work force (grades 1-9) comprising nearly 90% of TAZARA's work force.

3. Development of specialized skill areas which are relatively new or planned (e.g., operations of quarry power equipment) or in which there are insufficient numbers (e.g., accountants, engineers and some upper-level positions such as corporate planners, economists and computer specialists).

The individual projects in TAZARA's 10-Year Plan with identified hands-on training needs are being met by donors. For example, the Germans have provided on-the-job training for maintenance of its locomotives and workshops, the Austrians for permanent way sections, and the Finns for occupational safety. Project GM:2 (Manpower Development Planning and Training Facilities), funded by NORAD, has set up a Coordinating Unit for all donor activities and will develop a long-term Manpower Development Plan based upon TAZARA's 10-Year Development Plan. The development of this Plan is expected to take three years.

The Project Training Plan

The Project Training Plan addresses priority needs that are not being addressed by other donors:

a. On-the-job operations and maintenance training in diesel electric locomotives;

b. Mid- and upper-level management training aimed at improving productivity and efficiency;

c. Study tours for lower-grade staff to increase their knowledge, skill base and motivation.

d. Higher-level participant training in areas related to the Project technical assistance (i.e., corporate planning, accounting, management training, mechanical engineering, railroad management, economic/market analysis).

5.3 SUMMARY OF TECHNICAL ANALYSIS

A. Introduction

An interest free loan of US$500 million to the Governments of Tanzania and Zambia enabled the Chinese to construct, on a turnkey basis, the 1,860 km single track rail line between Kapiri Mposhi in Zambia (where it connects with the Zambia Railways system) and the port of Dar es Salaam in Tanzania. The 1,067 mm railway gauge is compatible with that of the other countries in Southern Africa and enables cargo to move to and from landlocked countries to the port of Dar es Salaam. Though the main users of TAZARA are Zambia and Tanzania, Malawi is increasing its use of the system and southern Zaire exports copper via this route.

B. Locomotives

Upon the opening of the line in July 1976, 85 main line diesel hydraulic locomotives (model DFH2) were provided by the Chinese along with 17 diesel hydraulic shunting locomotives (model DFH1). In 1979, an additional 12 main line diesel hydraulic locomotives were purchased from China. All of the locomotives were provided on an interest free loan basis. Since 1976, TAZARA has written off 31 of the 97 main line locomotives which were irreparably damaged in accidents due to a combination of human and mechanical failures.

The inferior quality of the Chinese-built locomotives and a continuing lack of quality spare parts have resulted in frequent and costly maintenance and repair requirements, a situation worsened by less than adequate maintenance practices at TAZARA workshops. The result has been a low locomotive availability rate: 23% in 1980 and 45% in 1986 (compared to 65-70% in other African countries such as the Ivory Coast and Zaire). The increased availability rate by 1986 was accomplished through the acquisition of new diesel electric locomotives and a major rehabilitation program to "re-engine" a large number of the Chinese locomotives.

In 1981, TAZARA, using its own financial resources, started a program to put new, more powerful engines in the Chinese locomotives. The engines were manufactured by the MTU Company of West Germany and are both more powerful and more efficient than the Chinese factory engines. To date, 26 Chinese main line diesel hydraulic locomotives have been retitted with new engines. The program will be completed in July 1987, when the last two locomotives are completed.

The MTU engines have proved to be relatively trouble free. The FRG, through KFW, provided technical assistance for the re-engining effort as well as on-the-job training for TAZARA's engineering and maintenance staff.

In 1983, the FRG, again through KFW, supplied 14 diesel electric locomotives (model U30C). These locomotives were manufactured by Krupp Company of West Germany under a license granted by GE. They are much more powerful than the older diesel hydraulics (3200 hp) and are extremely well suited for the long, continuous, steep grade sections along TAZARA's route (the central section around Mbeya). The GE/Krupp locomotives have performed very satisfactorily for the last 4 years, but are now nearing the time when normal, major overhauling will be necessary.

In April 1987, the status of TAZARA's main line locomotive fleet, taking 1986 as the base fleet, was as follows:

TYPE	IN OPERATION	OUT OF SERVICE (Repairable)	SCRAP
DFH2 (Chinese)	29	11	-
DFH2/MTU (Chinese)	25	1	-
U30C/KRUPP (GE)	11	2	1
TOTAL	65	14	1

C. Goods Wagons

At the time of the hand over of the rail line in 1976, TAZARA had a total of 2,066 wagons and 83 brake vans. All wagons are equipped with a dual braking system (air and vacuum). The availability of wagons is low, 45-65%, primarily due to excessively-long turnaround times, the imbalance between export and import cargos which results in wagons being held for long periods of time by Zambia Railways, and the increasing need for more specialized wagons to haul containers. A need for 1,020 new wagons has been identified by various studies undertaken by donor agencies. Of this total estimated need, a firm commitment has been made by SIDA to supply 375 on a grant basis. TAZARA also has a program to repair wagons and to convert wagons for container use.

D. Maintenance Capability

1. Workshops

TAZARA has fully-equipped locomotive and rolling stock repair workshops, running sheds and stores at Dar es Salaam, Tanzania, and Mpika, Zambia. There is also a light repair and routine maintenance workshop for locomotives at Mbeya, Tanzania, and locomotive turnaround depots at Mlimba, Chozi and Kapiri Mposhi.

Mbeya is currently the only facility capable of carrying out maintenance or repair work on diesel electric locomotives.

2. Manpower and Training

TAZARA has technically qualified management personnel in all branches of engineering (electrical, mechanical, civil, etc). However, foremen, fitters, electricians, artisans and other skilled and semi-skilled employees need additional training, especially on-the-job experience. Technical assistance, provided by both the People's Republic of China (PRC) and the FRG, has continuously improved workers' skills in the fields of repair and maintenance of locomotives and civil works over the past several years.

3. Workshop Productivity

Although TAZARA's mechanical engineering department has developed sound schedules for routine maintenance of locomotives and rolling stock, inadequate numbers of skilled technical staff, combined with inadequate training, have resulted in low workshop productivity (as measured by the time a locomotive is in the workshop for maintenance). Poor inventory systems and distribution of parts to the workshops, a lack of tools and workshop equipment, and poor workshop planning are also serious constraints which contribute to the unacceptably low locomotive availability rate.

E. Proposed Project Actions and Justification:

TAZARA's performance is currently constrained by several factors, including:

- Lack of adequate locomotive power;

- Insufficient spare parts for the normal 4-year heavy maintenance of the GE/Krupp locomotives;

- Shortages of spare parts and tools due to limited foreign exchange and poor management of workshops coupled with a low level of technical skills; and,

- Poorly designed Chinese locomotives, whose dismal service records have resulted in extremely high maintenance costs.

1. Locomotive Power:

TAZARA has forecast an annual traffic demand of 2.1 million MT by 1992/93, increasing to 2.5 million MT by 1995/96. In order to meet current traffic levels of approximately 1.2 million MT annually, TAZARA must adequately maintain its current locomotive fleet for at least another 5-10 years. In addition, to sustain the necessary locomotive availability rate, TAZARA may need to repower an additional number of Chinese locomotives and must certainly procure spare parts to maintain those already repowered. Funds have been set aside by TAZARA for parts replacement but no firm decisions have been made on the continuation of the repowering program.

The existing diesel electric fleet, through improved maintenance and the provision of spare parts under this project, together with the diesel hydraulic fleet, can accommodate current 1987 traffic. However, additional diesel electric locomotives must be added to meet the forecasted traffic growth over the next 5-10 years.

An analysis of demand through 1992/93 indicates a need for 17 new diesel electric locomotives. Due to its proven service record and successful field application on the rail line for the last 4 years, TAZARA's management believes that the procurement of model U30C diesel electric locomotives manufactured by GE should receive serious consideration.

The project proposes to procure 17 locomotives in two separate tranches of 8 and 9, including spare parts for a 5-year maintenance period. The locomotive procurement component of the project also includes 36 person-months of full-time technical assistance from the manufacturer and short-term assistance through a separate contract with a railways management firm which will be available to help design and implement improved maintenance programs. The technical advisor will be responsible for ensuring that the new locomotives are put in operational condition and will provide training and advice on TAZARA's maintenance program at the Mbeya workshop. The advisor will develop a maintenance plan for the workshop, establish performance standards and work with the rail management contract team to be funded under the project to design a training plan for workshop staff.

Technical assistance currently being provided under the present GE/Krupp locomotive contract may be extended for a further period of 3 years. This contract also provides on-the-job training and demonstration courses and has funded specialized training at GE facilities in the United States.

2. Workshop - General Maintenance and Repairs:

To improve the performance in workshops and raise the quantity and quality level of locomotive maintenance and service work, the project design team proposes two significant steps:

-work reallocation by workshop;

-short- and long-term training in management control, material handling and control, production control, work planning and quality control.

The reallocation effort would involve the following concentration of work:

Dar es Salaam Workshop - Repair and maintenance of all wagons and passenger coaches.

Mpika Workshop - Maintenance, repair and repowering of all Chinese-built diesel hydraulic locomotives.

Mbeya Workshop - Routine maintenance, major overhaul and repairs of all diesel electric locomotives.

3. Mbeya Workshop

The Mbeya workshop is currently only equipped to carry out minor maintenance and repairs. To effectively carry out major overhauling operations on diesel electric locomotives, specialized tools and equipment will be required Mbeya is particularly well suited to become the center for maintenance and repair of diesel electrics. A modest program has already been started to service the GE/Krupps and the workshop is located in the center of the steep gradient area where the layer locomotives will be permanently used. However, the shop is not equipped to conduct major overhauling of diesel electrics, nor can it accommodate routine maintenance on the number of locomotives which will be operating on the line by 1989.

To provide the required services, TAZARA plans to build a heavy repair workshop with built-in testing equipment sufficient for carrying out the repairs and maintenance of diesel electric locomotives. A second workshop building is proposed for the storage of spare parts and tools and will include a demonstration and classroom area.

The expansion of the Mbeya workshop as well as the provision of tools and equipment for the shop are an essential part of the project.

4. Technical Assistance and Training

Finally, the project will fund technical assistance in those areas of most immediate need:

a. locomotive maintenance and on-the-job training;

b. financial management;

c. accounting systems development and implementation;

d. rail systems management (including training, specialized engineering assistance, rail systems operations, planning and establishment of appropriate tariffs).

5.4 FINANCIAL ANALYSIS

TAZARA's financial management system has been characterized as "rudimentary" for the nature and level of TAZARA's business. The Authority lacks the costing system for formulating tariff structures for passenger and freight services necessary to ensure that the required operating profit is obtained. It is plagued by its revenue collection policy and by the continual movement in exchange rates between the Tanzania Shilling, Zambian Kwacha and the US Dollar. It is also seriously constrained by the severe shortages in foreign exchange currently experienced by the two owning governments of Tanzania and Zambia.

An exception to TAZARA's poor financial management lies in its effective forms and procedures for timely preparation of budgets. Both annual capital and operations budgets are prepared by the regional management accountant, consolidated at the Head Office by the Head Office Management Accountant, then presented to and approved by the Board of Directors and are, in turn, presented for timely consideration and approval by the Council of Ministers. The budgets for the financial year 1987/88 have recently been approved by the Board.

The existing budgetary procedures and controls have provided a basis for financial planning within TAZARA. However, that planning is dependent on the financial information derived from the relatively less well developed accounting system.

There is a statutory requirement that financial statements be prepared for TAZARA and audited within six months of the year end. However, the last set of accounts to be audited were those for the financial year 1982/83.

TAZARA's latest audited financial statement shows a total accumulated loss from operations of TSHs 888 million, or approximately US$15 million at the current rate. The operating account showed a small net surplus for the first time in 1985/86 and net surpluses are projected for 1986/87 (TSHs 344 million) and 1987/88 (TSHs 225 million). Results from the first two quarters of 1986/87 indicate that the projected operating surplus could be in the TSHs 600 million range (see Table 7).

Institutionally, TAZARA is constrained by its revenue policies. TAZARA must charge shippers in Zambia and Tanzania in local currencies. The bulk of goods hauled from Zambia, representing almost 75% of current revenues, accrue in Zambian Kwacha and the remaining accrue in Tanzanian Shillings. However, TAZARA's headquarters is in Dar es Salaam and most of the operating costs, about 55% are incurred in Tanzanian Shillings. This means

TABLE 7
TAZARA
FINANCIAL PERFORMANCE
CONDENSED INCOME STATEMENTS
(MILLIONS T. SHS)

	1st Quarter 1985/86	2nd Quarter 1985/86	3rd Quarter 1985/86	4th Quarter 1985/86	1st Quarter 1986/87	2nd Quarter 1986/87
Operating Revenue	191,172	135,095	189,935	184,449	353,989	355,667
LESS: Operating Expenditure	159,866	105,855	114,558	148,932	171,185	185,535
Operating Surplus	31,306	30,040	75,377	35,517	182,804	297,119
LESS: Depreciation & Interest for L/T Loans	35,919	35,919	35,919	35,919	35,112	35,122
	(4,613)	(5,879)	39,458	(0.402)	147,692	220,647

Source: Financial Manager, TAZARA Headquarters, April 1987

that funds must be transfered from where they are (Zambia) to where they are required (Tanzania). However, because of lack of foreign exchange and stringent foreign exchange policies imposed by Zambia, the required exchange has proven very difficult.

In the past, a modest amount of foreign exchange (roughly US$1.1 million in FY 1986) has been earned yearly from charges levied for Zairean, Malawian and Zimbabwean haulage. The projected 1987/88 earnings are over $4 million. TAZARA is allowed by the Government of Tanzania and the Central Bank of Tanzania to keep 50% of these foreign exchange earnings in an offshore bank account. In the past, these funds have been used to purchase offshore material requirements estimated at about $850,000 per year, and locomotive spare parts for the Krupp and MTU engines totalling about $27 million. The result is obvious: even when TAZARA is able to cover its needs in a good year on the operating account, it may find itself in a weak foreign exchange position, necessitating the use of normal channels of the respective governments, such as auctions, for obtaining foreign exchange allocations. With foreign exchange in short supply in both Zambia and Tanzania, this usually means that TAZARA is lucky to finance foreign exchange operating costs and scrape up enough to service its growing external debt.

With traffic volumes for Malawi, Zaire and Zimbabwe projected to increase substantially over the next 2-5 years, this somewhat bleak financial scenario could improve, as is indicated in the projected foreign exchange earnings of over $4 million. However, as the situation now stands, TAZARA will require a minimum of US$4.5 million yearly to service the Chinese loan (see Annex J). The problem is illustrated by the fact that even though the Authority earned a net operating surplus in 1985/86, a GE/Krupp diesel electric locomotive is sitting idle due to the lack of foreign exchange to purchase spare parts and repair spares.

Another critical problem is TAZARA's overall accounting system, particularly the lack of effective and accurate costing procedures. This problem, in turn, is fueled by TAZARA's inability to hire and retrain qualified accountants at any level. The costing problem is a serious one since accurate cost accounting is an essential ingredient for establishing rail tariffs. TAZARA is cognizant of this problem and has recently adopted new procedures for its operation developed by the accounting firm of TISCO. Staff who do not have the necessary university qualifications, but have the experience, have been placed in accountant positions on an acting basis. If

they prove themselves, they will be confirmed in the positions. It is a credit to the few good accountants and budget officers currently on TAZARA's payroll that, without adequate, supporting cost data, freight rates do not appear to be terribly out of line as evidenced by the surplus revenue realized by TAZARA in 1985/86.

Weaknesses in Accounting Systems and Procedures

Analysis by Coopers and Lybrand on behalf of AID (see Annex I) confirmed that the fundamental weakness in TAZARA's financial management system is the absence of an effective accounting system which results in the failure to:

a. make complete and accurate records of all expenditures;

b. prepare regular management accounts and information;

c. institute costing systems to conduct accurate and reliable tariff reviews;

d. produce annual financial statements for audit since the 1982/83 financial year.

Both internal and external accountability, which must be based on accurate, timely and relevant management reporting, are limited. To remedy this situation, TAZARA must:

a. improve its accounting systems and procedures;

b. develop an effective internal audit capability and complete the audit of financial affairs of TAZARA up to 30 June 1987; and

c. ensure that adequate internal human resources and skills are available to manage the finance department.

TAZARA's accounting and management information systems can be improved through the effective use of the ICL ME29 computer which TAZARA has recently purchased.

Currently, TAZARA plans to use the ME29 computer for its payroll system. Limiting the use of the computer to the processing of TAZARA's payroll would be a gross underutilization of its capacity. Yet there is no capability within TAZARA to use the computer and management has not yet recruited a manager. TAZARA does not appear to have any specific strategy for recruitment of qualified staff and the development of computer systems and implementation and management capability. TAZARA will, therefore, not be able to effectively implement any significant computer-based accounting systems without external support.

To help TAZARA institute a more reliable and accurate accounting system, including adequate costing, the services of short-term consultants will be provided to: (1) design and implement a computer-based accounting system; and (2) train staff in the Finance Department in accounting and data processing on-the-job to use the computer purchased.

In addition, the project will ensure that two persons will receive long-term academic training, one in management accounting and one in data processing, and up to 6 accountants will receive short-term, specialized training for a total of 36 person-months of short-term technical assistance to strengthen TAZARA's capabilities in management accounting.

The problem of staff recruitment and retention will still be a thorny one and staff shortages in certain skilled categories of accounting and inventory control will likely continue. TAZARA's management is acutely aware of the problem and has made a concerted effort to improve incentives within the Authority. For example, a 35% increase in salaries has been approved for national staff that are willing to relocate from Zambia to Tanzania and vice versa, education allowances for children and income tax advantages have been granted and junior officers have been made acting in positions for which they do not qualify technically until they prove themselves.

TAZARA's Tariff Structure:

Although TAZARA's tariffs are, in principle, related to average operating costs and TAZARA's books indicate that revenue meets operating costs, without a system to determine the average operating cost it is impossible to determine whether tariffs and revenue cover operating costs. It is, therefore, assumed that the process of setting rail tariffs is not related to the operating cost.

TAZARA (like Zambia Railways and unlike Mozambique or Zimbabwe) has a complicated tariff structure with eleven classes of commodity tariffs covering some 2,000 commodities, most of which never have and never will be carried by TAZARA (e.g., airplane dope in car load lots and bauxite). The tariff structure, in general, provides for a different class for the same commodity moved in wagon load lots and smaller load lots. Charges in the various classes vary by less than two-to-one from Class Eleven to Class One and by only 10% from Class Two to Class Five.

The differential in tariff charges has declined steadily in

recent years as tariff increases were larger for lower-rated commodities than for high-rated ones. Empty containers move as Class 11 with a minimum weight. TAZARA's tariff structure has no apparent economic basis. Tariffs are not based on risk of damage to goods (e.g., eggs and egg products both move under Class 8); density or loadability (e.g., milk and milk cans move under Class 8); or value per unit of cargo (e.g., fresh fish, canned fish, and farm machinery all move under Class 8).

Competitiveness in the region appears to be a factor in the setting of overall tariffs. Through specially negotiated arrangements, however, Zambian exports (which account for over 75% of TAZARA's traffic) move under special tariff rates which are below TAZARA's lowest tariff and lower in cost than on Zambia Railways. Zambia's mineral exports, therefore, greatly benefit from the use of TAZARA.

In the future, TAZARA plans to containerize some of its traffic. Since traffic other than copper which moves under the special tariff is likely to be containerized, the current complex tariff structure will be required for an ever declining share of total traffic. TAZARA plans to simplify the tariff structure. Periodic short-term technical assistance in financial management programs will help TAZARA develop and implement a computer-based and realistic costing system and procedures which would provide a basis for setting new tariffs and provide on-the-job training in accounting and data processing. One option to be considered is the institution of a two rate structure, one for general cargo and one for containers regardless of weight or content; another is to base the rate on the value per unit of cargo.

Another major difficulty with the tariff structure is that the 1986 general regulations governing tariffs indicate that tariffs are to be charged in local currency of the two owning countries if traffic originates from there and charges are to be quoted in both Tanzania Shillings and Zambia Kwachas, based on an exchange rate of 11:2. Under the 10% across-the-board tariff increase (except for clients paying in foreign exchange) effective July 1, 1987, the exchange rate will be modified to 15:2.

The accounting system divides the tariff in Shillings by 11:2 to obtain the tariff in Kwachas. The difficulty arises when, after collecting the amount due in Kwachas, the cash is converted into Tanzania Shillings at the prevailing rate, which is substantially below the 11:2 rate used in the tariff schedule.

A revised revenue policy that will take into account the revenue collection issues, possibly implement a market clearing exchange rate arrangement and institute a refined costing system, is crucial if TAZARA is to operate as a commercially viable authority.

TAZARA is cognizant of its problems and has taken action to eliminate some of them. TAZARA management has recognized that the complex tariff structure should be simplified and has requested the Board for authority to set tariffs for new traffic without reference to the Board. The recently purchased computer will enable TAZARA to computerize and implement the costing system it contracted TISCO to develop. New accounting policies have been prepared and procedures manuals have been rewritten with the help of TISCO and distributed to the financial staff at Headquarters and the regional offices. A new, revised revenue policy and a new invoicing and collection system have been approved by the Council of Ministers and station collection procedures have been amended and adopted.

To enhance TAZARA's efforts in improving financial management, the services of a long-term PSC financial manager, 42 person-months of short-term technical assistance from a financial IQC, 9 person-months of a transport economist and 6 person-months of a marketing specialist will be provided to TAZARA with project funds. Assistance from the financial IQC will help TAZARA convert the improved cost information and traffic forecasts into a tariff rate schedule that offers a chance for greater, overall profitability. Short-term training will also be provided to staff in the finance, marketing and economic planning departments. This assistance, combined with TAZARA's willingness to change and increased foreign exchange earnings from Malawian and Zairean shipments, can go a long way in improving the Authority's financial performance.

5.5 SUMMARY OF ECONOMIC ANALYSIS

The project aims at increasing the motive power of TAZARA through the purchase of 17 new diesel locomotives and spare parts for new and existing locomotives; workshop construction and provision of related tools and equipment; and long- and short-term assistance in training and technical and management control systems that will increase efficiency and decrease wastage. Response to TAZARA's operational needs has been based on the premise that extra motive power can boost capacity to about 2.1 million MT per annum i.e., up to the projected 1992/93 demand level.

TAZARA's traffic forecasts, based on SATCC estimates and GITEC's report on the Malawi Northern Transport Corridor, provided the framework of the cost benefit analysis. The rationale of the project is that in order to avoid traffic diversion to more costly southern routes or road transport, it is necessary to increase the capacity and improve the operational efficiency of TAZARA Railways. It is assessed that TAZARA's current haulage capacity is 1.2 million MT per annum both ways (see Technical Analysis). Its capacity could not be significantly exceeded without the AID project which, in addition to increasing current motive power, will ensure optimal utilization per locomotive.

Costs are based on 1987 estimates excluding taxes and interest. The investment costs include price escalation and inflation. No shadow exchange rates were used for the local component of the AID-funded project as estimates were made in dollars due to the fluctuations and relatively unstable local currencies of both countries. Because of the much higher parallel rates of the local currencies, shadow rates, if used, would have the effect of lowering the dollar value of the local component inputs, thus increasing the economic rate of return (ERR). The nature of the capital investment is such that it requires a long gestation period for it to recover adequate returns. Hence, a 20-year evaluation period is justified for the purposes of evaluation of this project.

The range of benefits has been narrowed in order to evaluate the project from a conservative perspective. Though benefits are based on 1984 SATCC estimates, the net value of benefit ranges will more or less remain the same, as it is assumed that any changes in input and output values over the years compensate for each other without substantial affecting the outcome of the evaluation. For evaluation purposes, it is assumed that the project, on its own, will enable TAZARA to meet traffic demand forecasts only up to 1992/93 (i.e., 2.1 million MT). Thereafter,

the traffic level is assumed to remain constant. The same framework used by SATCC to evaluate investment projects in the 10-Year Development Plan has been used and benefits have been identified as follows:

- An assessment is made of the foreign exchange savings resulting from expansion of total Zambian traffic from the present level up to the projected level in the demand forecast. The assessment assumes that Zambia maintains its current usage of the Beira Corridor to export about 20% of its copper. Although the Beira Corridor will be a viable, though possibly less secure route, its capacity to accommodate extra Zambian traffic will be constrained by demand from Zimbabwe traffic. In the TAZARA 10-Year Development Plan, SATCC estimates that Zambian traffic which cannot be carried by TAZARA (if TAZARA capacity is not expanded) will be diverted to other ports, incurring additional costs of US$85 per ton, of which about 88% will be in foreign currency.

- Tanzanian local traffic which would normally go by rail is assumed to be diverted to road transport if TAZARA capacity is not expanded. According to SATCC estimates, traffic diverted to road would incur costs of US$0.06 per ton-km (average distance travelled is 600 km). It is also assumed that the relationship between the economic costs of transporting one ton-km by road and rail is 4 to 1.

- The World Bank Staff Appraisal Report of the Malawi Northern Transport Corridor estimates that for Malawi, transport cost savings as a result of using the Northern Transport Corridor instead of the southern route would be about US$40 per MT i.e., the total costs are about 80% more when Malawi uses the southern route instead of the Northern Corridor (this includes Malawi Cargo Centres transshipment). The assumption here is that Malawi will use the full capacity of the upgraded Nacala Corridor and send remaining traffic through the Northern Corridor as soon as it is functioning.

The AID project is only part of the total investment package in the 10-year program; hence, benefits accruing to this project have been allocated on the basis of assessment of impact of AID-funded program inputs. Therefore, only 50% of the calculated benefits have been assumed to be the approximate estimation of benefits directly attributable to this project. (The other 50% is assumed to be for wagons.) The calculated ERR of the AID-funded components of the total investment package in the 10-year Development

Plan is estimated at 29.48% (see Annex K). The favorable conclusions arising from the economic analysis emphasize the role that TAZARA Railways can play in the SADCC region as its operational capability increases. There would be considerable transport savings, mostly foreign exchange, if TAZARA is able to accommodate the traffic increases. As Table K-5 in Annex K shows, Zambia saves about $6 million per annum (about 88% foreign exchange), Tanzania about the same (uses cost savings) and Malawi about $4 million.

Two thirds of the investment costs contribute directly to increased capacity through increased availability and utilization of locomotive power while the remainder is in the form of indirect benefits accruing from increased efficiency and reduced wastage. For project evaluation purposes, quantified benefits are directly related to provision of additional locomotive power and, hence, timing of the first year of benefits is aligned to delivery and actual utilization of additional locomotives i.e., the third year of the project (1989/90). However, the initial years are covered by technical assistance which will inevitably jerk up efficiencies (an aspect not quantified in the evaluation). Since this project involves financing mainly new capital equipment with assistance in maintaining the existing fleet, it will result in minor additional recurrent costs, estimated at about $200,000 per annum, with a 5% annual increase.

A sensitivity analysis to test variations of assumptions held in the analysis had little impact on the base case ERR of 29.48%. When investment costs are increased by 10%, the resulting ERR is 26.33%. There is insignificant effect when recurrent costs are doubled for all of the evaluation period. The ERR would drop to only 23.47% when there is an overall reduction of benefits by 20%. The viability of the project is, therefore, strongly emphasized by ERR's obtained in the sensitivity analysis. Moreover, a number of benefits are not quantified for reasons which include the difficulty of obtaining requisite data, and these would increase the ERR considerably. These benefits include net revenue that would accrue to TAZARA itself and to Tanzania (Dar es Salaam port charges), representing foreign exchange earnings.

5.6 SOCIAL SOUNDNESS ANALYSIS

The project has no major negative social impact and is considered feasible from the standpoint of resources availability. The potential positive impacts of the railway line are numerous for TAZARA employees, Tanzania and the landlocked SADCC countries.

TAZARA will be the direct beneficiary of the grant. The increased locomotive availability will result in a higher carrying capacity and increases in revenues, enabling TAZARA to operate at a profit and honor its loan obligations. TAZARA staff would benefit directly through long-term training, better job security for both skilled and unskilled workers and upgrading of the skill levels of workers and managers. Adequately equipped workshops, effective supervision and an appropriately instituted control system would result in better utilization of material, greater productivity and efficiency of staff.

Zambia, Tanzania and, to a lesser extent, Malawi, Zaire and Zimbabwe will be the principal countries who will benefit from proposed improvements in the TAZARA railway system. The benefits would be: (a) lower transport costs, manifested in a foreign exchange savings and a better balance of payments position; (b) the improved railway system could generate growth in employment, support services, small scale trade and other transport which could stimulate Dar es Salaam to become a regional trade center with consequent expansion of private sector activities and social services; and, (c) expansion of settlements and commercial activity along the rail route. Small holder farmers along the route will also benefit specifically through the ease in availability of agricultural inputs and overseas imports would be delivered more cheaply. In general, consumers in the countries TAZARA traverses will benefit from the lower import costs of a variety of manufacturing goods thus enhancing the quality of their life. The economies of Tanzania and Zambia as a whole would have greatest security of supply of essential inputs to development.

5.7 SUMMARY OF ENVIRONMENTAL ANALYSIS

The project entails the supply of new locomotives together with spare parts, workshop equipment and tools, and technical assistance and training to an existing railway line. Locomotives are diesel electric (smokeless) and changes to the physical environment will be nil except, perhaps, to a minimal effect at the workshop.

Railway usage will increase causing some increased frequency of noise but this will occur for small periods of time and within a circumscribed distance of the railway line. The net impact will be positive due to the greater flow of goods to and from Dar es Salaam for both international and domestic markets.

6.0 PROJECT IMPLEMENTATION PLAN

6.1 Project Management and Coordination

A. TAZARA:

TAZARA has the primary responsibility for the implementation of the project. With the assistance provided under this project through contracts and direct support from AID, TAZARA has the necessary capability to administer the procurement, contracting and construction elements of the project and has indicated that it will assign two professional mechanical engineers from its staff as Project Coordinators to work exclusively on coordinating project activities and to be the direct liaison with U.S. contractors and suppliers and the USAID/Tanzania Project Officer. Given the high priority TAZARA places on this project, the Deputy General Manager of TAZARA has assured AID that he will make himself available to all parties to resolve any and all substantive project issues which may arise.

A Project Committee will be established to direct the implementation of the project. The Committee will be chaired by TAZARA's Project Coordinator and will include representatives from USAID/Tanzania, REDSO/ESA and project-funded contract firms. The Project Committee will meet monthly to review, monitor and plan project implementation actions.

The meetings will focus on past work plans, actions and accomplishments, future work plans, quarterly reports on progress and the draft implementation schedule for the upcoming month. The committee will also inspect work and review training in progress.

The General Manager of TAZARA, as the highest official at TAZARA, is ultimately responsible for overall management of the project and will approve the expenditure of funds, sign contract documents and enter into contracts, acknowledge final receipt of goods and correspond as necessary with AID on project implementation matters. TAZARA's Mechanical Engineering Department will be responsible for preparing technical specifications and lists of parts to be procured. TAZARA's Supplies Manager and the technical office concerned will work directly with the AID Regional Commodity Management Officer (RCMO) to prepare the terms and conditions of procurement documents for goods and with the Regional Contracting Officer (RCO) to prepare scopes of work and requests for technical proposals, select contractors and award contracts. The Supplies Manager will also verify and

accept commodities and equipment procured with project funds with technical assistance from the project-funded contract with a railways management firm (see Project Description, Section 3).

B. USAID

USAID/Tanzania will assume primary management responsibility for implementing the project. In view of the size and complexity of the activities proposed, a full-time Project Manager, either a direct-hire officer or a personal services contractor, will be added to the mission's staff to manage the project. Ideally, he/she will have and engineering background and project management experience. In addition, assistance will be provided by the REDSO/ESA Engineer, Commodity Management Officer and Legal advisors and, on an as-needed basis, from SARP/USAID/Zimbabwe staff. To support the Project Manager on a part-time basis, USAID/Tanzania has recruited a direct hire Project Officer, as well as a direct hire engineer and a PSC engineer, both of whom are being recruited to manage the proposed Economic Policy Reform Program in Tanzania (which focuses on improvements to Tanzania's road network).

Financial monitoring will be the responsibility of the Controller, USAID/Tanzania, assisted as necessary by the Regional Financial Management Çenter (RFMC) in Nairobi. The project will undergo financial reviews and audits by a certified accounting firm through a contract with USAID/Tanzania or RFMC. Funding is included in the monitoring and evaluation portion of the project budget to cover the costs of external audits.

During implementation of the project, the Project Officer may call on other appropriate USAID/Tanzania officers for assistance. Additional professional services (e.g., engineering, contract, procurement, legal) will be provided by REDSO/ESA on an as-needed basis.

C. Reporting Requirements

1. Progress Reports:

TAZARA will submit progress reports on a quarterly basis to USAID/Tanzania. These reports are to be submitted within 15 days after the end of a calendar quarter.

The project progress reports are expected to cover, inter alia:

a. Major activities and general progress against the work plan;

b. Problem areas requiring Project Committee and USAID assistance for solution;

c. Issues and problems that impinge on the future implementation and direction of the project;

d. TAZARA's proposed solutions to the problems;

e. Action to be taken during the next quarter; and

f. Information on any matter which the Committee and/or USAID may reasonably request.

2. Financial Reports

The TAZARA Project Coordinator will report U.S. dollar disbursements under the project on a quarterly basis to the Project Committee and AID. Reports are to be submitted within 15 days after the end of the calendar quarter.

Disbursements will be shown by line item category for the previous quarter and cumulatively. Categories shall be the same as those shown in the project budget estimate in the grant agreement. Any current and anticipated financial problems shall be clearly noted and explained in the report. Financial problems requiring resolution by the Project Committee and USAID shall be highlighted. Should the need arise for a particular financial report format, the USAID/Tanzania Controller will provide the necessary guidance in a Project Implementation Letter.

6.2 Project Implementation Schedule

A. Activity:	Proposed Dates	Responsible Organization
. Project Agreement signed	August 1987	TAZARA/USAID/
. PIL No. 1 sent to TAZARA	September 1987	USAID/TANZANIA
. RFTP for railway managerial services prepared	September 1987	RCO/TAZARA/ USAID/TANZANIA
. RFTP for railway managerial services published	October 1987	USAID/TANZANIA/ RCO
. Work Order/Scope of work prepared against existing IQC	October 1987	USAID/TANZANIA/ RCO
Initial Conditions Precedent met	November 1987	USAID/TANZANIA
. Design drawings, specifications and preliminary contract documents for construction of Mbeya workshop completed. Bills of Quantities and specifications prepared for building items requiring FX	November 1987	RE/USAID/ TAZARA
. Financial T.A. contracted through work order against existing IQC	November 1987	TAZARA/USAID/ RCMO
. TAZARA develops performance specifications for procurement of new 3200 hp locomotives completed	November 1987	TAZARA/USAID/ RCMO
. RFTP for railway managerial services closed	December 1987	TAZARA/RCMO/ USAID
. RFQ/IFB for FX items for Mbeya workshop prepared	December 1987	TAZARA/USAID/ RCMO
. Financial TA work plan submitted and services begun	December 1987	USAID/TAZARA/ IQC/RCO
. List of parts for GE/Krupp locomotives prepared	December 1987	TAZARA/RE/RCO
. Construction of workshop extention contract prepared and issued	December 1987	TAZARA/RCO/USAID
. List of tools and workshop equipment prepared	December 1987	TAZARA/RE

. RFQ for 8 new 3200 hp locomotives prepared	December 1987	RCMO/USAID/RCO/ TAZARA
. Selection process for long-term participants by TAZARA begins	December 1987	USAID/Tanzania/ TAZARA
. RFQ for new 3200 hp locomotives advertised in U.S.	January 1988	USAID/RCO/RCMO/ TAZARA
. RFQ/IFB for FX items for Mbeya workshop advertised	January 1988	TAZARA/RCO/RCMO/ USAID
. PSC Financial Technical Assistance contracted	January 1988	USAID/TANZANIA/ TAZARA/RCO
. Evaluation of proposals for railway managerial services	January 1988	TAZARA/RCO/USAID
. Request for cost proposals from selected firms for railway managerial services	February 1988	TAZARA/RCO/USAID
. Proposals received for supply of new 3200 hp locomotives	February 1988	TAZARA/RCO/ USAID/RCMO
. Negotiations for railway managerial services completed	March 1988	TAZARA/RCO/USAID
. Contract let for FX items for Mbeya workshop	March 1988	TAZARA/RCO/ RCMO/USAID
. List of parts for GE/Krupp locomotives prepared	March 1988	TAZARA/RCO/ RCMO/USAID
. Financial TA complete first work order and review findings with TAZARA	April 1988	TAZARA/USAID/IQC
. Contract for railway managerial services awarded	April 1988	TAZARA/RCO/USAID
. Contract for supply of 8 new 3200 hp locomotives awarded	April 1988	RCMO/TAZARA/RCO/ USAID
. Locomotive engineer arrives at Mbeya under locomotive supply contract	April 1988	RCMO/RCO
. On-the-job training begins at Mbeya	April 1988	Contractor/TAZARA
. RFQ for purchase of GE/Krupp locomotive spare parts prepared	April 1988	RCMO/RCO/ TAZARA/USAID

. Local purchase of training equipment	May 1988	TAZARA/RCMO
. Additional work orders prepared against existing financial IQC	May 1988	RCO/TAZARA
. Long-term Technical Assistance for Railway Management Services arrive in country	May 1988	USAID/TANZANIA
. RFQ for purchase of GE/Krupp locomotive spare parts advertised	May 1988	RCO/RCMO USAID/TANZANIA
. Proposals for the supply of GE/Krupp locomotive spare parts received	July 1988	RCO/RCMO/ TAZARA/USAID
. Training advisor develops training plan, needs assessment and bench marks	July 1988	Contractor/TAZARA AID/TANZANIA
. Contracts for the supply of GE/ Krupp locomotive spare parts negotiated	August 1988	RCO/RCMO/ TAZARA/USAID
. First set of long-term participants depart for training	August 1988	USAID/TANZANIA
. Maintenance procedure plans developed	September 1988	Contractor/TAZARA
. Short-term participant training begins	September 1988	Contractor/TAZARA
. Inventory and production systems developed	September 1988	Contractor/TAZARA
. Financial IQC assisting Finance Department computerized its systems	Aug 88-July 89	Contractor/TAZARA
. Short-term consultant develops plan for in-service management training	Aug-Nov 1988	Contractor/TAZARA
. FX items for Mbeya workshop delivered	Aug-Nov 1988	RCMO/TAZARA/ USAID
. Transport Economist and Tariff Expert review TAZARA's traffic and provide assistance	September 1988-1989	Contractor/TAZARA
. GE/Krupp locomotive spare parts delivered	Sept-Dec 1988	TAZARA/RCMO/ USAID
. Construction of Mbeya workshop completed	November 1988	RE/TAZARA/ USAID

. Overhaul and repair of GE/Krupp locomotives continue with new parts	December 1988	Contractor/TAZARA
. Delivery of 8 new 3200 hp locomotives	July 1989	RCMO/TAZARA/USAID
. Locomotives put in service	August 1989	TAZARA/Contractor
. First evaluation	October 1989	USAID/Evaluation Team/TAZARA/ Contractors
. Remaining long-term participants depart for training	October 1989	TAZARA/USAID/ TANZANIA
. Contract award for supply of additional nine 3200 hp locomotives with 20% spare parts	December 1989	RCMO/TAZARA
. Long-term participants return	August 1990	TAZARA
. PSC financial manager departs	February 1991	TAZARA
. Management training in process	1988-1991	TAZARA/Contractor
. Study tours in process	1988-1991	TAZARA/Contractor
. Deliver of nine additional 3200 hp locomotives	May 1991	RCMO/TAZARA
. Locomotives put in service	June 1991	TAZARA/Contractor
. Departure of long-term technical assistants	June 1991	TAZARA/RCMO
. Remaining long-term participants return	June 1991	TAZARA/USAID/ TANZANIA
. Final evaluation	July 1991	USAID/TANZANIA
. PACD	August 1991	USAID/TANZANIA
. Completion Report prepared	October 1991	USAID/TANZANIA

D. Locomotive and Tools Procurement

1. Procurement of locomotives and spare parts will be undertaken by TAZARA, assisted by REDSO and USAID staff, using the Authority's standard operating procedures as modified to ensure compliance with AID's contracting and procurement regulations. The REDSO RCMO has reviewed TAZARA's procurement procedures and found them generally acceptable. Several large procurement actions are envisioned for the supply of the proposed 17 new 3200 hp diesel locomotives and GE parts, technical services, and tools and equipment necessary to repair these locomotives. Since the procurement source and origin of the locomotives is Code 000 (U.S. only) and because there are only two prospective U.S. suppliers of locomotives of this size (GE and General Motors), TAZARA will need to consider factors in addition to equipment prices, such as the overall level of effort and cost implications of procurement from alternate sources which would be necessary to provide TAZARA with equal end product. These factors would include maintenance, training, spare parts inventory and storage, management considerations of dealing with different types of equipment, recurrent costs, etc. A study of these factors will be made by the IQC consultant assisting with the preparation of technical specifications. Accordingly, procurement will be conducted in accordance with normal practices, that is, by two-step IFB as set forth in AID Handbook (HB) 11, Chapter 3, unless AID determines, based on the consultants' findings, that it is impossible to develop adequate specifications for use in a two-step IFB. In this case, negotiated procurement will be undertaken, per HB 11, Chapter 3.

   The procurement of tools and other specialized equipment for the workshop will be accomplished with full and open competition under an Invitation for Bids (IFB) or a Request for Quotations (RFQ). The RCMO will assist TAZARA to advertize all AID-financed commodity procurements, as required by AID regulations. Contracts exceeding $100,000 in value will be reviewed by the RCMO, USAID/Controller and approved by the Director, USAID/Tanzania, prior to AID commitment of funds. The commodity procurement schedule on Pages 93 and 94 provides tentative timing for the purchase and arrival of each commodity category.

2. Source and Origin of Procurement:

   The authorized source and origin of locomotives and locomotive spare parts procured under this project is a Geographic Code 000 (U.S. only). The authorized source and origin of all other commodities is procured under the project in code 941.

3. Shipping

Because only a few very large consignments of goods are envisioned, and because no U.S. flag vessels presently provide scheduled liner service from the East Coast of the United States to the port of Dar es Salaam, the RCMO and the TAZARA Supplies Manager will work with the AID Office of Procurement, Transportation Services Division (SER.OP/TRANS) to explore the possibility of chartering a vessel or of inducing a U.S. flag vessel to carry the project's consignments from the U.S. to Dar es Salaam. If this is not feasible, waivers of U.S. nationality of shipper will be processed.

4. Receipt and Utilization

All commodities purchased under the project will be shipped to the port of Dar es Salaam. All AID-financed goods consigned to TAZARA under the project will be cleared from customs within one month of their arrival at port. The General Manager of TAZARA will acknowledge receipt by letter to the Director, USAID/Tanzania, of all goods financed by AID within 1 month of receipt. All parts, tools and equipment purchased with AID-provided funds will be inventoried and entered into the official property records of TAZARA within three months of clearance from customs. The TAZARA property record books will indicate the items in the inventory which were purchased with AID funds.

6.3 Commodity Procurement and Delivery Schedule

The schedule below refers to the number of days after the signing of the Grant Agreement:

Action Completed	Number of Days After Grant Agreement is Signed
TAZARA develops specifications for procurement of the new 3200 hp locomotives	90
RFQ for the new 3200 hp locomotives prepared by TAZARA with help of the RCMO	120*
RFQ for new 3,200 hp locomotives advertised in U.S.	140*
Bids received for supply of the new 3200 hp locomotives	180

Contract awarded for the supply of the new 3200 hp locomotives	200
Delivery of the new 3200 hp locomotives	380-600
List of parts for GE Krupp locomotives prepared	220
RFQ for the purchase of the GE Krupp locomotives spare parts prepared	240
RFQ for the purchase of the GE Krupp locomotive spare parts advertised	260
Quotations for the supply of the GE Krupp locomotive spare parts received	300
Contracts for the supply of the GE Krupp locomotive spare parts completed	340
GE Krupp locomotive spare parts delivered	400-480
Blueprints and specifications for construction contract for Mbeya workshop completed	90
Construction contract prepared and issued	120
Construction of workshop at Mbeya completed	480
List of requirements and specifications prepared for FX items required for Mbeya workshop	120
RFP/IFB for FX items for Mbeya workshop	140
Contract let for FX items for Mbeya workshop	200
FX items for Mbeya workshop delivered	320-480

Technical assistance to be provided by the locomotive supplier, to begin before the arrival of the locomotives and to continue for three years, will be part of this procurement.

6.4 Contracting and Methods of Financing

A review of TAZARA operations indicates that TAZARA has the necessary capability to carry out project procurement actions. AID will make direct payment to U.S. suppliers for all major procurement actions. The inter-governmental agreement between Tanzania and Zambia establishing TAZARA explicitly empowers it as a corporate body to act as agent of the two governments in all matters relating to the railroad. TAZARA is, therefore, fully authorized to enter into any contractual or procurement agreements related to its operations. The General Manager is the procurement agent; however, he has delegated this authority to the Supplies Manager and a Tender Committee for the procurement of all goods and services. TAZARA has procured rolling stock, supplies, equipment and services from local and overseas suppliers. TAZARA will use the same procedures, modified according to USAID regulations where necessary, for project procurement. The overall institutional and administrative arrangements within TAZARA are sufficient to enable TAZARA to expeditiously manage a large procurement of diesel locomotives, spare parts and related managerial technical services.

This method of TAZARA using its own procedures modified to comply with HB 11, combined with direct payment by AID, conforms to USAID/Tanzania's current policies on program financing and implementation. Table 8 below outlines the methods of implementation and financing for project activities:

TABLE 8

METHOD OF IMPLEMENTATION AND FINANCING

	CATEGORY	IMPLEMENTATION METHOD	FINANCING METHOD
1.	Procurement of locomotives, 20% spares and 36 pm of engineering technical assistance	TAZARA, HB 11 Contract	Direct Letter of Commitment by AID/W
2.	Procurement of work-shop tools and equipment	TAZARA, HB 11 Contract	Direct Letter of Commitment by AID/W
3.	Procurement of spare parts for GE/Krupp locomotives	TAZARA, HB 11 Contract	Direct Letter of Commitment by AID/W
4.	Procurement of construction/work-shop equipment	TAZARA, HB 11 Contract	Direct Letter of Commitment by AID/W

5.	Procurement of managerial technical assistance	TAZARA, HB 11 Contract	Direct Payment to Contractor by USAID/Tanzania
6.	Procurement of short-term technical assistance for finance department	IQC Work Order AID Direct Contract (REDSO/ ESA contracting officer)	Direct Payment to Contractor by USAID/Tanzania or RFMC
7.	Long/short term U.S. training	USAID/Tanzania PIO/P, ST/AID/WASH	Direct Payment by AID/W
8.	Short-term in-country training	PIL - TAZARA training Unit; Contractors	Direct Payment by USAID/Tanzania or RFMC
9.	Other local procurement	TAZARA, HB 11 Direct TAZARA procurement using both TAZARA and U.S. funds	Direct Payment by USAID/Tanzania or direct payment with TAZARA's own funds

A. Technical Assistance

Four contract mechanisms will be used to implement the technical assistance components of the project.

The Requests for Proposals for the new diesel electric locomotives will include 36 person-months of long-term technical services and 9 person-months of short term services (in addition to the normal 1-week per locomotive typically supplied by manufacturers). The consultant will begin work at the Mbeya workshop prior to the arrival of the locomotives, about 6 months after signing the grant. Similarly, the contract for spare parts will include 48 person-months of technical services.

The 42 person-months of financial and data processing technical assistance will be provided through an IQC currently in place with RFMC/Nairobi. Approximately 12 work orders will be issued during the project (prepared by the REDSO/ESA contracting office and RFMC). The first will be issued about 90 days after the grant agreement is signed and services are expected to begin by January 1988. A work plan will be submitted by the IQC 30 days after a contract is signed with them.

To procure the services of a railway management firm, a Request for Technical Proposals will be prepared and published 30 days after signing the grant agreement. Proposals will be evaluated and a contract negotiated and signed 8 months after signing the grant. The long-term railway operations manager (36 pm total) will arrive 9 months after signing the grant. She/he will collaborate with TAZARA to develop a work plan and schedule for the short-term technical assistance. Although the PP team and TAZARA have preliminarily identified areas where short-term

of work, schedules and other requirements to facilitate the short-term technical assistance effort, obviously, the rail systems management team will need to coordinate some activities with the locomotive specialist at Mbeya (e.g., mechanical engineering).

The 42 person-months of financial and data processing technical assistance will be provided under the contract with the railway management firm. The first will be issued about 90 days after the grant agreement is signed and services are expected to begin by January 1988. A work plan will be submitted by the IQC 30 days after a contract is signed with them.

Finally, the project will fund the full-time services of an accountant (from within the SADCC region) to help TAZARA operationalize its new accounting system. The accountant will be primarily operational, but will also assist other technical advisors in such areas as training needs identification and implementing an effective cost accounting system. The accountant will be employed on a PSC for 3 years.

B. Training

TAZARA's Chief Taining Officer, under the direction of the Deputy General Manager, will be the primary implementing officer for the training component (see Annex G).

3. Participant Selection

a) In service management training: All mid- and upper-level managers at TAZARA will receive this training.

b) Participant training: long- and short-term participants will be nominated by TAZARA after approval of the TAZARA Selection Administration Committee in accordance with training plans and criteria established by Month 6 of the project. All nominations for training will be subject to AID concurrence.

c) Study tours: study tours for staff members will be recommended by supervisors in the Mechanical Engineering Department in conformity to plans and criteria established by Month 6 of the project.

4. Procurement

$75,000 worth of training materials will be ordered through a host country contract in Month 3 of the project for delivery between Months 6 and 12. With the exception of photocopiers, all items will be bought off the shelf in the region.

5. Logistical Support

TAZARA will provide offices, classrooms, storage facilities and boarding and transportation for in-country training. The railway management contractor will be responsible for short-term housing and all overseas transportation arrangements.

6.4 Consideration of Small, Disadvantaged and Women-Owned firms (Gray Amendment)

Consideration has been given to the potential involvement of firms and organizations covered by the Gray Amendment. Given the nature of the contracting activities to be carried out in the implementation of this project i.e., procurement of locomotives and related spare parts and technical services from a very limited specialty field, it is not likely that any U.S. firm able to provide the commodities or services would qualify for a set-aside under Section 8a of the Small Business Act. The locomotives and spare parts are available from only a limited number of identifiable sources. The capabilities of a railway management firm will be required to provide specialized technical assistance. The financial services will be obtained through an Indefinite Quantity Contract already in effect to serve the needs of AID programs in East and Southern Africa.

It is possible, however, that firms and organizations covered under the Gray Amendment may be able to offer a portion of the managerial and training services that will be included in the technical assistance package. When the RFP is developed, a special emphasis will be placed on the participation of such entities. Both the RFP and the synopsis to be published in the Commerce Business Daily will contain a provision which encourages the participation of such entities and states clearly that, all other factors being equal, the extent of their participation may become a deciding factor for award.

6.5 Project Financial Audits

Periodically during the life of the project, USAID/Tanzania and/or RFMC/Nairobi will arrange to issue work orders to a certified public accounting (CPA) firm (to be selected through an IQC) to carry out a non-federal review of the dollar and local currency accounts under the project for all contracts and the implementation authority. The scope of work and work order for the local accounting firm is limited to financial matters and will be approved by RFMC and the Contracts Office in Nairobi. The audit findings, work papers and report will be reviewed by the same office. RFMC will also ensure that the audit firm's qualifications and performance standards for non-federal auditors are met.

The contractor will conduct the financial review with project criteria and requirements and the performance of project entities viz-a-viz these criteria and requirements. The terms of reference will include semi-annual auditing of activities with resulting reports submitted to USAID's Project Manager. These reports will

be shared with the TAZARA Project Coordinator and other project entities, as appropriate. Solicitation and award of the work order is expected to be handled by RFMC and the REDSO/ESA Contracting Officer, since proposals are expected from firms whose representatives are primarily present in Tanzania, Kenya and elsewhere in East and Southern Africa.

7.0 EVALUATIONS

Two project evaluations, an interim one in August 1989 and a final evaluation at the completion of the project in July 1991.

In both cases, the evaluation teams will include a railways management specialist (contract), railway engineer (contract), transport economist (contract), commodity management officer (AID), and a project development officer (AID). In addition, TAZARA will provide the services of appropriate personnel to serve on the evaluation teams (e.g., mechanical engineer, planning officer). The Project Committee and the USAID/Tanzania Project Manager will provide all necessary documentation and data required by the team. The project budget includes $100,000 for the two evaluations.

The first evaluation will focus on the verification of traffic demand trends in comparison to current forecasts. This review will help determine the number of new diesel locomotives needed to cover demand through 1993. At the time of PP design, existing forecasts indicate a need to procure 17 new locomotives to meet 1993 traffic levels. Eight of these will purchased immediately after the Grant Agreement is signed in 1988, and the remaining nine will be ordered in 1989, pending verification of traffic trends. The 1989 evaluation will also assess TAZARA's performance in establishing reliable and accurate cost data and the use of this data to set appropriate tarriff rates. Thirdly, the interim evaluation will review progress toward achieving the outputs established for the project, particularly but not limited to an assessment of increased staff capabilities as a result of training and technical assistance provided under the project as well as changes in staffing levels achieved by TAZARA. A condition precedent to the disbursement of funds for the second tranche of nine locomotives will be included in the Grant Agreement requiring specific actions on the part of TAZARA regarding the recruitment of qualified staff as well as the recording of accurate cost data upon which to base tariff rates.

The interim evaluation will also cover implementation matters such as the timeliness of delivery of project commodities, the quality of technical assistance and training and progress toward increasing productivity at workshops. To the extent possible, objective project performance indicators, such as turnaround time and locomotive availability, will be reviewed (based on TAZARA's data and actual observations by the evaluation team), although it may only be possible to assess trends at this point.

The final evaluation is scheduled shortly before the PACD. This evaluation will review all aspects of the implementation and impact of the project and the findings and recommendations will be incorporated into AID's evaluation system in order to share pertinent lessons learned. In addition to repeating assessments included in the first evaluation, the final evaluation will document the impact of the project by measuring changes in locomotive availability, carrying capacity, management systems improvements, and maintenance capability. Although parts of the evaluation will be somewhat subjective (e.g., quality of accounting data, general improvements in management), indicators such as average locomotive availability, average turnaround time of wagons and the time required to service locomotives will be directly measurable and can be used as surrogate measures of improvement in related areas such as management and staff development.

8.0 CONDITIONS PRECEDENT, COVENANTS, AND NEGOTIATED STATUS

8.1 Conditions Precedent

1. Prior to any disbursement, under the grant, except for planned pre-implementation technical assistance related to the procurement contractor, and prior to the issuance of any commitment documents under the Project Agreement, the Grantee shall furnish in form and substance satisfactory to AID evidence that: (i) TAZARA has formally designated an individual at TAZARA who will be Project Coordinator, oversee project activities and chair Project Committee meetings; and (ii) the Project Committee has been established, with membership from USAID/Tanzania, REDSO/ESA, TAZARA staff and representatives from the rail management contract firm and the firm providing long-term assistance in locomotive maintenance, and has held an initial meeting.

2. Prior to disbursement of funds under the Grant to construct a workshop extension at Mbeya or to the issuance by AID of commitment documentation with respect thereto, the Grantee will provide, in form and substance satisfactory to AID, plans and specifications, architectural drawings, cost estimates and bidding documents for the construction.

3. Prior to disbursement of funds for the procurement of the second tranche of nine locomotives or to the issuance by AID of any commitment documentation with respect thereto, the Grantee will provide in form and substance satisfactory to AID:

   a) Evidence that the TAZARA tariff structure is adequate to cover operating costs and anticipated recurrent costs and to generate a profit to the Authority, or that a proposal has been accepted to revise the tariff structure, taking into account the recommendations following from the technical assistance financed by the Project;

   b) Evidence that critical vacancies in the planning and accounting departments have been filled or adequate plans have been made to fill such vacancies.

8.2 Covenants

1. The Grantee will covenant that during the life of the project and for a period of 3 years immediately thereafter, TAZARA will, unless otherwise agreed to by AID in writing, annually reserve from its foreign exchange earnings an amount equivalent to not less than US$500,000 for the purchase of locomotive spare parts for repair and maintenance of all locomotives in the fleet.

2. The Grantee will covenant that it will identify a counterpart for each project-funded consultant (whether long- or short-term) who will have assumed duty prior to the arrival of the consultant, and that the counterpart will be assigned on a full-time basis to work with the consultant during the period of the assignment.

3. The Grantee will covenant that all personnel sent for long-term training under the Project will be required to return to work for TAZARA, in a position making use of the training received for a period of not less than 2 years for every year of training provided up to the limits set by TAZARA's bonding agreement, unless AID otherwise agrees in writing. TAZARA will require each trainee selected to sign a written commitment to this effect prior to the commencement of training.

4. The Grantee will covenant that all spare parts for diesel electric locomotives will be used to repair and maintain locomotives on an as-needed basis regardless of whether the locomotives are assigned to Tanzania or Zambia.

8.4 Negotiating Status

Representatives of TAZARA have worked closely with USAID in developing this project. They are fully in accord with the project components as well as the implementation arrangements. TAZARA has accepted in principle all the conditions and covenants to be included in the Project Grant Agreement. TAZARA has also provided assurance that its requisite contribution would be forthcoming in a prompt and timely fashion by including TAZARA's contributions to the project in its 1987/88 budget. That budget was recently approved by TAZARA's Board of Directors at its regular quarterly meeting in June 1987. Through their representatives on the Board of Directors, the Governments of Zambia and Tanzania have approved the project.

USAID/Tanzania and USAID/Zimbabwe foresee no obstacles to signing the Regional Transport Development - Dar es Salaam Corridor Project Grant Agreement immediately after the signing of the USAID/Zimbabwe Director's authorization, receipt of fiscal data and notification to proceed.

TAZARA

Tanzania - Zambia Railway Authority

Annexes

(690-0240)

Tanzania-Zambia Railway Authority

ANNEX A

Telephone: 64191/5
Telegrams: TAZARA

OFFICIAL FILE

Our Ref: AD/C/2/ /CC/VI/14

Your Ref:

28th April 1987

MAY 4 19[illegible]
Head Office
P.O. Box [illegible]
DAR ES SALAAM
5-8-87

Mrs Allison R. Herrick
Director
Southern Africa Regional Programme
United States Agency for International
Development
P.O. Box [illegible]
HARARE
Z I M B A B W E

Dear Madam,

REQUEST FOR ASSISTANCE IN IMPLEMENTING PROJECTS UNDER THE TEN YEAR DEVELOPMENT PLAN FOR TANZANIA ZAMBIA RAILWAY AUTHORITY (TAZARA)

The Governments of the United Republic of Tanzania and the Republic of Zambia have noted with great pleasure the interest the United States of America has taken during the SADCC Conference held in Gaberone, Botswana and the follow up at the [illegible] annual Donors Conference held on 13th - 14th February 1987, and the subsequent follow up discussions held between your AID representatives and TAZARA, in solving TAZARA's operational and other problems.

The two governments are most grateful for the interest you have expressed in considering financial assistance to implement the following projects:-

ME 1 Locomotives
Spare parts
Tools and Equipment for Workshops an

ME 1 Technical Assistance and Training

I am, on behalf of my two governments of the United Republic of Tanzania and the Republic of Zambia, the shareholders of TAZARA, officially requesting you to favour us with a financial assistance for the above mentioned projects. As part of a multi-donor contribution, your participation in our Ten Year Development Plan will greatly enhance [illegible] to provide services to the land locked countries within the SADCC region.

Your favourable and early decision concerning the above request will be highly appreciated.

Yours faithfully,
TANZANIA ZAMBIA RAILWAY AUTHORITY

S.C.I. Mapara
GENERAL MANAGER

c.c. The Permanent Secretary
Ministry of Power, Transport & Communication
P.O. Box 50065
LUSAKA

" The Principal Secretary
Ministry of Communication & Works
P.O. Box 9144
DAR ES SALAAM

" Mr. Howard Sharlach
Acting Director
US AID
P.O. Box 9130
DAR ES SALAAM

" The Permanent Secretary
Ministry of Finance
P.O. Box RW 50062
LUSAKA

" The Principal Secretary
Ministry of Finance, Economic Affairs
and Planning
DAR ES SALAAM

" The Principal Secretary
Ministry of Foreign Affairs
DAR ES SALAAM

" The Permanent Secretary
Ministry of Foreign Affairs
P.O. Box 50069
LUSAKA

" The Permanent Secretary
National Commission for
Development Planning
P.O. Box RW 50268
LUSAKA

THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF FINANCE, ECONOMIC AFFAIRS AND PLANNING

Telegrams — "HAZINA" DAR ES SALAAM
Telephone: 21271

P.O. Box 9111
DAR ES-SALAAM

(All Official correspondence should be Addressed to the Principal Secretary — Treasury)
In Reply please quote

Ref. TYC/R/20/8

8 May, 1987

OFFICIAL FILE

Mrs. Allison B. Herrick,
Director,
Southern Africa Regional Programme,
United States Agency for
International Development
1 Pascol Avenue
P.O. Box 3340
HARARE - ZIMBABWE

5-25-87

Dear Madam,

REQUEST FOR ASSISTANCE IN IMPLEMENTING PROJECT UNDER THE TEN YEAR DEVELOPMENT PLAN FOR TANZANIA ZAMBIA RAILWAY AUTHORITY (TAZARA)

The governments of the United Republic of Tanzania and the Republic of Zambia wish to note with great pleasure the interest the United States of America has taken during the SADCC Conference held in Botswana, Gaberone and the follow up at the TAZARA annual Donors Conference held on 13th - 14th February 1987 and subsequent follow up discussions held between your AID representatives and TAZARA in solving TAZARA's operational and Managerial problems.

My Government has noted with great satisfaction your participation and is most grateful for the interest you have expressed in offering assistance in implementing the following projects:

ME: 1 Locomotives, Spareparts, Tools and Equipment for Workshops.

GM: 1 Technical Assistance and Training.

We are now therefore requesting you to favour us with a financial assistance for the above projects. As part of a multidonor contribution, your participation will greatly inhance TAZARA's ability to provide services to the land locked countries within the SADCC region.

Since TAZARA is jointly owned by Tanzania and Zambia, a similar request has been addressed to your esteemed government by the Government of the Republic of Zambia.

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N CO
SHEET UNTIL READY FOR FILL

Your favourable and early decision concerning the above request will be highly appreciated.

Yours faithfully,

(G. Rutihinda)
PRINCIPAL SECRETARY
MINISTRY OF FINANCE, ECONOMIC AFFAIRS & PLANNING

Copy to: Principal Secretary
Ministry of Communications & Works
P.O. Box 9144
DAR ES SALAAM

-"+ The General Manager
Tanzania Zambia Railway Authority
P.O. Box 2834
DAR ES SALAAM

-"- Mr. Howard Sharlack,
Acting Director
USAID
DAR ES SALAAM

UNCLASSIFIED STATE 166125/01

(5) ACTION AID-3 INFO AMB/DCM R/F

MAY 28 1986

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AIDAC NAIROBI, FOR REDSO

E.O. 12356: N/A
TAGS:
SUBJECT: SOUTHERN AFRICA REGIONAL TRANSPORT PID (690-0237)

1. ECPR FOR SUBJECT PID TOOK PLACE ON MAY 5 UNDER CHAIRMANSHIP OF DAA SAIERS. PID WAS APPROVED, BOTH WITH RESPECT TO THE OVERALL FRAMEWORK FOR A CONTINUING SERIES OF TRANSPORT DEVELOPMENT ACTIVITIES IN THE SADCC REGION, AS WELL AS THE TWO SPECFIC ACTIVITIES PROPOSED IN THE PID. THE SARP/HARARE OFFICE IS AUTHORIZED TO PROCEED WITH FINAL DESIGN OF THESE TWO ACTIVITIES, THE MALAWI NORTHERN CORRIDOR AND THE UNCTAD GRANT FOR TECHNICAL ASSISTANCE AND TRAINING. THE FOLLOWING CONCLUSIONS EMERGED FROM ISSUES DISCUSSED AT THE ECPR MEETING AND SHOULD SERVE AS GUIDANCE FOR PREPARATION OF THE TWO PROJECT PAPERS.

— A. PROJECT FORMAT AND PROCEDURES - AGREEMENT WAS REACHED THAT THE TRANSPORT SECTOR IS SUFFICIENTLY CRITICAL FOR THE SADCC REGION TO LAY CLAIM TO A MAJOR PORTION OF THE FUNDS LIKELY TO BE AVAILABLE TO THE SA REGIONAL PROGRAM OVER THE NEXT FIVE YEARS. THE SECTOR

CONCEPT OF THE PID WAS ACCEPTED, AND THE COMMITTEE AGREED THAT THE PID PROVIDED A GOOD RATIONALE FOR MAJOR AID ASSISTANCE IN THE TRANSPORT SECTOR FOR THE NEXT SEVERAL YEARS. IT WAS NOTED THAT THE DOLS 50 MILLION LOP TOTAL IN THE PID WILL NOT ACTUALLY BE AUTHORIZED AT ONCE, BUT WILL BE DEPENDENT ON THE PIECEMEAL APPROVAL OF EACH INDIVIDUAL ACTIVITY. THE MISSION SHOULD TAKE CARE TO ENSURE CONSISTENT TREATMENT OF FUTURE ACTIVITIES. SINCE A POTENTIAL FOR CONFUSION IN PROJECT ACCOUNTING EXISTS FOR THIS KIND OF UMBRELLA ACTIVITY. AID/W UNDERSTANDS THE MISSION INTENDS TO TREAT EACH ACTIVITY AS A SEPARATE PROJECT, INCLUDING SEPARATE PROJECT NUMBERS AND CNS INDICATING THAT EACH PROJECT IS AN

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NDEPENDENT ENTITY. IN THIS CASE THE FIELD CAN EXERCISE
OLS 10 MILLION AUTHORITY FOR EACH ACTIVITY.
LTERNATIVELY, IF A SINGLE DOLS 50 MILLION PROJECT WITH
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EQUESTED ONCE THE CUMULATIVE TOTAL OF ACTIVITIES
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ND CONSISTENT ON THIS POINT.

E PROPOSAL FOR SYNOPSIS CABLES ON FUTURE ACTIVITIES,
TH FIELD APPROVAL LIKELY FOR MOST PPS, WAS ACCEPTABLE
THE COMMITTEE AND CHAIRMAN, WHO CONSIDERED THAT
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OPOSALS COULD BE ADDRESSED ON THE BASIS OF THE
NOPSIS CABLES, AND THAT TECHNICAL FACTORS COULD BE
ALT WITH MOST EFFECTIVELY IN THE FIELD BY SARP/HARARE,
OSO AND THE MISSIONS INVOLVED.

E. PROHIBITED COUNTRIES - OF THE TWO ACTIVITIES IN
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TS KNOWN TO THE ECPR, APPEARS TO POSE NO PROBLEM
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NDARD WITH THE REGIONAL PROGRAM, A LEGAL OPINION
PARED BY THE RLA SHOULD BE ANNEXED TO THE PP FULLY
IEWING THE RELEVANT FACTS AND DEMONSTRATING THAT
R THE PROJECT AS DESIGNED, DIRECT AID ASSISTANCE
NOT BE PROVIDED TO THE PROHIBITED COUNTRIES. THE
E OF THE PROHIBITED COUNTRIES SHOULD ALSO BE
USSED IN THE SYNOPSIS CABLE FOR EACH ACTIVITY.

ONOR COORDINATION - ALTHOUGH THIS IS BASICALLY A
D BANK RESPONSIBILITY, THE MAWAWI NORTHERN CORRIDOR
EGION SHOULD ENSURE THAT AID REQUIREMENTS ARE BUILT
BID DOCUMENTS. THIS WILL REQUIRE CLOSE MONITORING
ARP ENGINEER, RLA AND IQC ENGINEERS. THE WORLD BANK
XPECTING TO MANAGE AND FINANCE A&E AND SUPERVISION
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ITH A SUGGESTION BY AFR/TR/ENG THAT AID ASSUME
ONSIBILITY FOR THIS FUNCTION ON THE PORTION OF THE
ILL PROJECT WHICH WE ARE FINANCING. THE CHAIRMAN SAW
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ORLD BANK FOR A&E WORK AND CONSTRUCTION SUPERVISON.
ALTERATION WOULD COST AID MORE, COULD COMPLICATE
ELAY PROJECT IMPLEMENTATION, AND IN ANY CASE WAS
D TO BE UNNECESSARY IN VIEW OF THE PROPOSED USE OF
. IQC FIRM TO REVIEW SPECIFICATIONS AND BID
ENTS PREPARED BY THE BANK-FINANCED FIRM. AS A
-DONOR EFFORT, ASSURANCES MUST BE SOUGHT FROM OTHER

INDEPENDENT ENTITY. IN THIS CASE THE FIELD CAN EXERCISE DOLS 10 MILLION AUTHORITY FOR EACH ACTIVITY. ALTERNATIVELY, IF A SINGLE DOLS 50 MILLION PROJECT WITH SUB-ACTIVITIES IS INTENDED, AN AD HOC DOA MUST BE REQUESTED ONCE THE CUMULATIVE TOTAL OF ACTIVITIES EXCEEDS DOLS 10 MILLION. SINCE THIS AMOUNT IS EXCEEDED WITH THE FIRST TWO PROJECTS, EFFECTIVELY THIS MEANS AN AD HOC DOA WITH EACH SUBSEQUENT ACTIVITY. THE TWO FORTHCOMING PPS, AND FUTURE PPS, SHOULD BE BOTH CLEAR AND CONSISTENT ON THIS POINT.

THE PROPOSAL FOR SYNOPSIS CABLES ON FUTURE ACTIVITIES, WITH FIELD APPROVAL LIKELY FOR MOST PPS, WAS ACCEPTABLE TO THE COMMITTEE AND CHAIRMAN, WHO CONSIDERED THAT POLICY CONSIDERATIONS AND THE RELATIVE RANKING OF PROPOSALS COULD BE ADDRESSED ON THE BASIS OF THE SYNOPSIS CABLES, AND THAT TECHNICAL FACTORS COULD BE DEALT WITH MOST EFFECTIVELY IN THE FIELD BY SARP/HARARE, REDSO AND THE MISSIONS INVOLVED.

-- F. PROHIBITED COUNTRIES - OF THE TWO ACTIVITIES IN THE PID, THE MALAWI NORTHERN CORRIDOR, ON THE BASIS OF FACTS KNOWN TO THE ECPR, APPEARS TO POSE NO PROBLEM REGARDING PROHIBITED COUNTRIES. CARE SHOULD BE TAKEN, HOWEVER, THAT THE TA GRANT TO UNCTAD DOES NOT PROVIDE DIRECT ASSISTANCE TO THE PROHIBITED COUNTRIES. AS IS STANDARD WITH THE REGIONAL PROGRAM, A LEGAL OPINION PREPARED BY THE RLA SHOULD BE ANNEXED TO THE PP FULLY REVIEWING THE RELEVANT FACTS AND DEMONSTRATING THAT UNDER THE PROJECT AS DESIGNED, DIRECT AID ASSISTANCE WILL NOT BE PROVIDED TO THE PROHIBITED COUNTRIES. THE ISSUE OF THE PROHIBITED COUNTRIES SHOULD ALSO BE DISCUSSED IN THE SYNOPSIS CABLE FOR EACH ACTIVITY.

C. DONOR COORDINATION - ALTHOUGH THIS IS BASICALLY A WORLD BANK RESPONSIBILITY, THE MALAWI NORTHERN CORRIDOR PP DESIGN SHOULD ENSURE THAT AID REQUIREMENTS ARE BUILT INTO BID DOCUMENTS. THIS WILL REQUIRE CLOSE MONITORING BY SARP ENGINEER, RLA AND IQC ENGINEERS. THE WORLD BANK IS EXPECTING TO MANAGE AND FINANCE A&E AND SUPERVISION OF CONSTRUCTION FOR THE NORTHERN CORRIDOR AS A WHOLE. DESPITE A SUGGESTION BY AFR/TR/ENG THAT AID ASSUME RESPONSIBILITY FOR THIS FUNCTION ON THE PORTION OF THE OVERALL PROJECT WHICH WE ARE FINANCING, THE CHAIRMAN SAW NO COMPELLING REASON TO DISTURB THE ARRANGEMENTS MADE BY THE WORLD BANK FOR A&E WORK AND CONSTRUCTION SUPERVISON. THIS ALTERATION WOULD COST AID MORE, COULD COMPLICATE AND DELAY PROJECT IMPLEMENTATION, AND IN ANY CASE WAS DEEMED TO BE UNNECESSARY IN VIEW OF THE PROPOSED USE OF A U.S. IQC FIRM TO REVIEW SPECIFICATIONS AND BID DOCUMENTS PREPARED BY THE BANK-FINANCED FIRM. AS A MULTI-DONOR EFFORT, ASSURANCES MUST BE SOUGHT FROM OTHER

DONORS THAT THEIR PLEDGED INPUTS WILL BE DELIVERED ON TIME. CP PRIOR TO DISBURSEMENT CAN BE USED AS SAFEGUARD, BUT THE PP SHOULD ALSO STATE, WITH SUPPORTING FACTS, THAT WE HAVE REASONABLE ASSURANCES PRIOR TO OBLIGATION THAT OTHER DONOR AID WILL BE FORTHCOMING IN A TIMELY MANNER. BANK AND GOM ARE IN BEST POSITION TO COORDINATE THIS MATTER.

-- D. TECHNICAL HELP ON DESIGN - PER DISCUSSION WITH MORRIS AND LIGHT, WE ARE PROCEEDING WITH IQC HELP ON PREPARATION OF BID DOCUMENTS AND RFP. WOULD APPRECIATE CABLED SOW FROM SARP TO EXPEDITE PROCESSING OF WORK ORDER. ALSO AFR/TR/ENG IS EXPLORING POSSIBILITY OF SENDING ENGINEER WITH PORT CONSTRUCTION EXPERIENCE IN MID-JUNE TO SERVE ON PP TEAM.

-- E. GOM-GOT AGREEMENT - WHAT IS STATUS OF GOM-GOT AGREEMENT ON THE AUTONOMOUS USE OF PORT FACILITIES AT DAR, SIMILAR TO AGREEMENT WITH ZAMBIA? MISSION SHOULD CHECK TO DETERMINE WHETHER THIS AGREEMENT WILL BE SIGNED BY THE TIME THE PP IS COMPLETED. WORLD BANK EAST AFRICA TRANSPORT OFFICE PREDICTS A JUNE SIGNING OF GOM-GOT AGREEMENT, BUT THIS SHOULD BE MONITORED CLOSELY BY THE MISSION AND DESCRIBED IN THE PP, INCLUDING ASSESSMENT OF HOW MUCH AUTONOMY MALAWI WILL HAVE. SINCE A SUCCESSFUL GOM-GOT AGREEMENT ON PORT FACILITIES IS ONE OF THE MAJOR PILLARS ON WHICH THE ECONOMIC RATIONALE OF THE OVERALL NORTHERN CORRIDOR CONCEPT RESTS, THE PP MUST STATE THE BASIS FOR ASSURANCES THAT THE GOM-GOT PORT AGREEMENT WILL BE SUCESSFULLY REACHED AND SIGNED WITHIN A

REASONABLE TIME PERIOD WHICH WILL NOT ADVERSELY AFFECT THE PROJECT'S IMPLEMENTATION SCHEDULE. FURTHERMORE, IF THE GOM-GOT PORT AGREEMENT IS NOT SIGNED BY THE TIME OUR PROJECT IS OTHERWISE READY TO BE OBLIGATED, A CONDITION PRECEDENT TO DISBURSEMENT WILL BE MADE PART OF THE GRANT AGREEMENT, REQUIRING A SATISFACTORY PORT AGREEMENT BETWEEN THE TWO GOVERNMENTS.

-- F. MISSION RESPONSIBILITY - COMMITTEE CONSENSUS, SUPPORTED BY CHAIRMAN, WAS THAT QUESTION OF MISSION VS REGIONAL MANAGEMENT RESPONSIBILITY IS A MATTER TO BE DECIDED FOR EACH PROJECT ON A CASE-BY-CASE BASIS. IN MALAWI NORTHERN CORRIDOR PROJECT, THE COMMITTEE AGREED THAT CIRCUMSTANCES SUPPORT GIVING USAID/MALAWI OVERALL MANAGEMENT RESPONSIBILITY, WITH ONGOING HELP FROM SARP AND REDSO AS NEEDED. PP SHOULD REFLECT THIS DECISION, ALONG WITH A FULL EXPLANATION OF THE DIVISION OF LABOR AMONG AID MANAGEMENT ENTITIES. SINCE PROJECT APPROVAL AND IMPLEMENTATION AUTHORITY FOR THE SARP PROGRAM IS FORMALLY DELEGATED TO THE DIRECTOR OF USAID/ZIMBABWE, A REDELEGATION BY USAID/Z TO USAID/MALAWI WOULD BE REQUIRED.

-- G. FINAL TECHNICAL DESIGN AND COST ESTIMATE - SINCE THE OVERALL FINAL DESIGN AND BUDGET FOR MALAWI CORRIDOR ARE BEING DONE BY GERMAN FIRM OF GITEC AND WILL NOT BE

READY BEFORE THE END OF JUNE AND PERHAPS LATER, OUR PP BUDGET WILL PROBABLY HAVE TO BE BASED MAINLY ON PRELIMINARY TECHNICAL DESIGN. HOWEVER, SINCE CHANGES IN TECHNICAL OPTIONS CAN AFFECT COSTS SUBSTANTIALLY AND SINCE BUDGET NOW BEING PREPARED BY GITEC MAY BE SIGNIFICANTLY ABOVE EARLIER ESTIMATES (ACCORDING TO BANK'S EAST AFRICA TRANSPORT DIVISION), THE PP TEAM SHOULD ENSURE THAT THE LATEST AVAILABLE TECHNICAL AND COST INFORMATION IS TAKEN INTO ACCOUNT AND SHOULD MAINTAIN CLOSE COORDINATION WITH WORLD BANK AND GOM ON THE MATTER OF THE CONSTRUCTION DESIGN AND COST ESTIMATES. IN LIGHT OF THESE ANTICIPATED COST INCREASES BEYOND THE PAIP ESTIMATE OF DOLS 9.5 MILLION FOR THE NORTHERN CORRIDOR, THE DOA IN PARA 3 BELOW IS WRITTEN WITH SOME FLEXIBILITY TO PERMIT AUTHORIZATION OF A MAXIMUM AMOUNT OF DOLS 11.5 MILLION, IF NECESSARY, TO AVOID THE NEED FOR AN AMENDED DOA.

-- H. PROJECT SELECTION CRITERIA - CRITERIA OF PAGE 9 OF PID WERE GENERALLY ACCEPTED, BUT SHOULD BE EXPANDED, REFINED, RANKED AND REVIEWED PERIODICALLY IN THE COURSE OF SARP DISCUSSIONS WITH SATCC. FUTURE SYNOPSIS CABLES SHOULD DEMONSTRATE HOW SELECTED ACTIVITIES MEET THESE CRITERIA BETTER THAN POSSIBLE ALTERNATIVE CHOICES.

-- I. INVOLVEMENT OF OTHER AID MISSIONS - RELEVANT AID MISSIONS IN SADCC COUNTRIES SHOULD BE CONSULTED AT THE FORMATIVE STAGE OF PROPOSALS FOR FUTURE TRANSPORT ACTIVITIES UNDER THIS PROJECT.

-- J. PROJECT ANALYSES FOR NORTHERN CORRIDOR PP - THE PROJECT PAPER SHOULD INCLUDE FINANCIAL AND ADMINISTRATIVE ANALYSES, NOT MENTIONED IN PID OUTLINE OF

PP REQUIREMENTS. COSTS ASSOCIATED WITH RELATED ACTIVITIES IN TANZANIA SHOULD BE TAKEN INTO ACCOUNT. ECONOMIC ANALYSIS SHOULD PROVIDE REASONABLE BASIS FOR ASSUMPTION THAT REDUCTION IN TRANSPORTATION COSTS WILL HAVE A WIDESPREAD IMPACT ON DEVELOPMENT AND GROWTH.

-- K. PROCUREMENT AND CONTRACTING GUIDELINES - PER PRINCIPLES ESTABLISHED IN STATE 74107 ON REGIONAL MANPOWER MANAGEMENT PROJECT (MADREC), THE APPROPRIATE AUTHORIZED GEOGRAPHIC CODE FOR THE NORTHERN CORRIDOR PROJECT WOULD BE CODE 941 FOR FOREIGN EXCHANGE COSTS AND ANY BENEFICIARY SADCC COUNTRY FOR LOCAL COSTS. HOST COUNTRY CONTACTING IS CONSIDERED APPROPRIATE IN VIEW OF MALAWI'S FAVORABLE PAST RECORD IN MANAGING AID-FUNDED CONSTRUCTION CONTRACTS.

-- L. 611(E) CERTIFICATION - THE MISSION IS REMINDED OF THE NEED FOR AA/AFR CONCURRENCE IN THE DIRECTOR'S 611(E) CERTIFICATION, WHICH IS NOT INCLUDED IN THE DOA. THIS CAN BE ACCOMPLISHED BY AN EXCHANGE OF CABLES.

M. IEE - APPROVAL OF INITIAL ENVIRONMENTAL EXAMINATION WILL FOLLOW BY SEPTEL.

2. SARP, AND IN THE CASE OF THE NORTHERN CORRIDOR ACTIVITY, USAID/MALAWI, SHOULD TAKE ACCOUNT OF ABOVE COMMENTS DURING PREPARATION OF PPS. UNDER NORMAL DOA 140 PROCEDURES, DIRECTOR OF USAID/ZIMBABWE, IN CAPACITY AS DIRECTOR OF SARP, MAY AUTHORIZE THESE TWO PROJECTS WITH REDSO CONCURRENCE WHEN DESIGN IS COMPLETED, WITH THE GRANT AGREEMENT FOR NORTHERN CORRIDOR EXECUTED WITH THE GOVERNMENT OF MALAWI. HOWEVER, IN THIS INSTANCE, IN VIEW OF OUR DESIRE TO HAVE THESE TWO ACTIVITIES AUTHORIZED BY JUNE 30 IF AT ALL POSSIBLE, WE BELIEVE THAT MISSION APPROVAL WITHOUT FORMAL REDSO CONCURRENCE IS WARRANTED. THIS EXCEPTION IS BASED ON THE MISSION'S FULL CAPACITY TO REVIEW AND APPROVE THE PROJECTS AND THE EXTENSIVE REDSO INVOLVEMENT IN THE ECONOMIC ANALYSIS AND ENVIRONMENTAL ASSESSMENT FOR THE NORTHERN CORRIDOR AND THE PARTICIPATION OF AN AID/W PROJECT OFFICER AND PERHAPS AN AID/W PORT ENGINEER ON THE PP TEAM.

3. AA/AFR HEREBY DELEGATES AUTHORITY TO THE DIRECTOR, USAID/ZIMBABWE, TO AUTHORIZE THE NORTHERN CORRIDOR PROJECT IN AN AMOUNT NOT TO EXCEED DOLS 11.5 MILLION AND THE REGIONAL TECHNICAL ASSISTANCE AND TRAINING PROJECT IN AN AMOUNT NOT TO EXCEED DOLS 1.5 MILLION. THESE AD HOC DELEGATIONS OF AUTHORITY SHALL BE EXERCISED ON ALL THE TERMS AND CONDITIONS OF DOA 140 EXCEPT FOR THE AMOUNT IN THE CASE OF THE NORTHERN CORRIDOR PROJECT AND THE REQUIREMENT FOR REDSO CONCURRENCE. SHULTZ
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(5) ACTION AID-3 INFO AMB/DCM R/F

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CN: 29109
CHRG: AID
DIST: AID

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INFO RUEHNR/AMEMBASSY NAIROBI PRIORITY 4082
BT
UNCLAS STATE 241818

AIDAC, NAIROBI FOR REDSO/ESA

E.O. 12356: N/A
TAGS:
SUBJECT: SOUTHERN AFRICA REGIONAL TRANSPORT II (690-0237)

REFERENCES: (A) HARARE 04147, (B) STATE 166125

1. IEE CLEARED/APPROVED GC/AFR AND AFR/TR 8/1/86.

2. U.S. ARY CORP OF ENGINEERS SUPPORTS EA SCOPING STATEMENT.

3. THIS REFERS TO THE TECHNICAL ASSISTANCE OF THE CTIVITY TO BE FUNDED UNDER (690-0238). WHITEHEAD

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ANNEX C

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 87 to FY 91
Total U.S. Funding $46,100,000

Project Title & Number: REGIONAL TRANSPORT DEVELOPMENT - DAR ES SALAAM CORRIDOR (TAZARA) (690-0240)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
GOAL: To support the development of a strong economic foundation for growth in Southern Africa.	Decrease in total transport costs, particularly foreign exchange, spent on transport services by SADCC members Decrease in use of South Africa routes by SADCC member countries. Increase in the reliability of the SADCC regions transportation system.	SATCC and national statistics on transport service expenditures and goods carried on SADCC transport system.	SADCC member states continue to cooperate for their own mutual benefits. No acts of hostility disrupt the Northern Corridor transportation system.
PURPOSE: To strengthen and expand the carrying capacity and improve the operational efficiency of TAZARA.	END OF PROJECT STATUS (EOPS): a. Near doubling in volume of cargo hauled annually, from 0.98 million mt in 1986 to 1.9 million mt in 1991; b. increase in TAZARA's annual handling capacity to 2.1 million mt to meet anticipated 1993 traffic demand. c. 40% increase in average locomotive availability rate, from 46% in 1986 to 65% in 1991; d. Decrease in average wagon turn around time from 35 to 20 days;	TAZARA records of and statistics on locomotive availability, down time and turnaround time. Project Evaluation TAZARA records of goods hauled TAZARA training and manpower development records.	Cargo and passenger traffic demand for TAZARA's rail services increase as forecasted TAZARA continues normal maintenance on rail line at a level adequate to maintain a minimum track carrying capacity of 2.1 million mt/yrs. Other donor programs to improve TAZARA's performance and maintain good track condition continue and are effective. TAZARA remains committed to its 10 Year Development Plan.

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 87 to FY 91
Total U.S. Funding $46,100,000

Project Title & Number: REGIONAL TRANSPORT DEVELOPMENT - ASSISTANCE TO TAZARA

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
PROJECT OUTPUTS:	Magnitude of outputs:		
a. Additional new diesel electric locomotives in service;	17 new diesel electric locomotives in service and being maintained.	TAZARA's records-Site inspections	
b. Existing GE/Krupp diesel electric locomotives overhauled and damaged locomotives repaired and operating;	spare parts provided for the overhaul of 11 locomotives and the repair of 2 damaged effectively used to put locomotives into operation.	Records of locomotive operations	
c. Maintenance program operating efficiently for entire fleet of diesel electric locos.;	Equipment and tools being used at workshops for locomotive and rolling stock repairs.	Inventory of spare parts, tools and equipment; site visits	
d. Mbeya workshop remodelled and in use to maintain diesel electric locomotives only and to store spare parts;	Heavy duty workshop constructed (with separate separated demonstrated and storage rooms) and in use	Site inspection of Mbeya workshop	TAZARA budgets LC for local construction costs of workshops.
e. Improved maintenance procedures developed and being implemented for diesel locomotives	Average duration of time locomotives are in shop for maintenance decreased by 50% over 1986 service records.	TAZARA's maintenance records and statistics.	
f. Rail system operating procedures developed and implemented including those for overall planning, traffic forecasting, demand analysis, and tariff setting.	Comprehensive Planning and Marketing policies developed. Procedures for traffic forecasting and demand projections developed and being used	TAZARA's policies and records. TAZARA reports/records.	
g. Cost accounting procedures computerized and in use as basis for determining operating costs.	Computerized accounting system implemented and cost accounting procedures developed, to prepare more accurate budgets and to set appropriate tariff rates.	Contractor's reports TAZARA Records	

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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 87 to FY 91
Total U.S. Funding $46,100,000

Project Title & Number: REGIONAL TRANSPORT DEVELOPMENT - ASSISTANCE TO TAZARA

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
h. Data on operating cost presented to TAZARA management as basis for a realistic tariff structure;	System for setting tarrif rates that reflect operating costs prepared for TAZARA's management consideration in third year of Project	TAZARA's policies TAZARA's records.	
i. Production, quality and inventory systems control established;	Inventory of all diesel spare parts accomplished Inventory system being used in all workshops.	TAZARA's workshop inventory Site visits	
j. TAZARA artisans and technicians in mechanical engineering received on-the-job training;	600 TAZARA's staff trained on operation and maintenance of diesel electric locomotives		
k. TAZARA's accountants received training;	20 TAZARA's staff trained in accounting.		
l. Improved performance of TAZARA's management staff;	180 management staff retrained	TAZARA staff development reports/ records.	
m. Long term participants trained in critical railway management areas.	6 participants staff return from long term trained and holding positions in accounting, planning and traffic forecasting.	Position held by returned participants	Participants can be identified for long term training.

INPUTS:

17 New locomotives	$ 25,500,000	. Purchase orders and Letters of Commitments/Credit services . TAZARA's receiving reports . Site visits . Quarterly report . Evaluation reports . Completion reports
20% equivalent of capital costs for Spare parts, repair parts and related technical services	$ 6,100,000	
Workshop tools/equipment	$ 1,800,000	
Training	$ 1,075,000	
Construction	$ 400,000	
Technical Assistance	$ 5,436,000	
Evaluation/monitoring	$ 150,000	
Sub Total	$40,461,000	
Contingency/inflation	$ 5,489,000	
SUBTOTAL	$45,950,000	

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project:
From FY 87 to FY 91
Total U.S. Funding $16,100,000

Project Title & Number: REGIONAL TRANSPORT DEVELOPMENT - ASSISTANCE TO TAZARA

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
TAZARA (equivalent in local currency)			
Locomotives/spare parts	$ 500,000	Site Visits TAZARA's Reports Evaluation Reports	
Workshop/equipment	$ 700,000		
Construction	$ 900,000		
Training	$ 365,000		
Technical Assistance	$ 800,000		
Project Monitoring & Evaluation	$ 100,000		
	$ 3,365,000		
Contingency and Inflation	$ 503,000		
SUBTOTAL	$ 3,868,000		
OTHER DONORS (Equivalent in US$)			
Construction	$ 50,000	Site Visits Evaluation Reports	
Training	$ 25,000		
Technical Assistance	$ 90,000		
Project Monitoring & Evaluation	$ 20,000		
Contingency and Inflation	$ 175,000		
	$ 29,000		
SUBTOTAL	$ 204,000		
GRAND TOTAL	$ 50,022,000		

ANNEX D

FY 1987 PROJECT STATUTORY CHECKLISTS

5C(1) - COUNTRY CHECKLIST- TANZANIA FY 1987

Listed below are statutory criteria applicable generally to FAA funds, and criteria applicable to individual fund sources: Development Assistance and Economic Support Fund.

		TANZANIA
A.	GENERAL CRITERIA FOR COUNTRY ELIGIBILITY	
1.	FAA Sec. 481(h)(1); FY 1987 Continuing Resolution Sec. 526. Has it been determined or certified to the Congress by the President that the government of the recipient country has failed to take adequate measures or steps to prevent narcotic and psychotropic drugs or other controlled substances (as listed in the schedules in section 202 of the Comprehensive Drug Abuse and Prevention Control Act of 1971) which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully?	NO
2.	FAA Sec. 481(h)(4). Has the President determined that the recipient country has not taken adequate steps to prevent (a) the processing, in whole or in part, in such country of narcotic and psychotropic drugs or other controlled substances, (b) the transportation through such country of narcotic and psychotropic drugs or other controlled substances, and (c) the use of such country as a refuge for illegal drug traffickers?	NO

3. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is not denied or contested by such government? NO

4. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? NO

5. FAA Sec. 620(a), 620(f), 620(D); FY 1987 Continuing Resolution Sec. 512. Is recipient country a Communist country? If so, has the President determined that assistance to the country is important to the national interests of the United States? Will assistance or reparations be provided to Angola, Cambodia, Cuba, Iraq, Syria, Vietnam, Libya, or South Yemen? Will assistance be provided to Afghanistan without a certification? NO

6. FAA Sec. 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? NO

7. FAA Sec. 620(l). Has the country failed to enter into an agreement with OPIC? NO

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8. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? (b) If so, has any deduction required by the Fishermen's Protective Act been made?

NO

9. FAA Sec. 620(q); FY 1987 Continuing Resolution Sec. 518. (a) Has the government of the recipient country been in default for more than six months on interest or principal of any AID loan to the country? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the appropriation bill (or continuing resolution) appropriates funds?

NO - as of April 1987 when a bilateral debt rescheduling agreement between the U.S. and Tanzania became effective.

10. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the amount of foreign exchange or other resources which the country has spent on military equipment? (Reference may be made to the annual "Taking into Consideration" memo: "Yes, taken into account by the Admninistrator at time of approval of Agency OYB". This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

Resources spent on military equipment were taken into account in the FY 1987 "Taking into Consideration" memo dated November 14, 1986.

11.	FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?	NO
12.	FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? (Reference may be made to the Taking into Consideration memo.)	While Tanzania was slightly in arrears as of September 30, 1986, this was taken into consideration in the FY 1987 "Taking into Consideration" memo dated November 14, 1986. Tanzania was not delinquent within the meaning of Article 19 of the UN Charter.
13.	FAA Sec. 620A. Has the government of the recipient country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed an act of international terrorism?	NO
14.	ISDCA of 1985 Sec. 552(b). Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures?	NO
15.	FAA Sec. 666. Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA?	NO

16.	FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or i such a state, either received or detonated a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan).	NO
17.	FAA Sec. 670. If the country is a non-nuclear weapon state, has it, on or after August 8, 1985, exported illegally (or attempted to export illegally) from the United States any material, equipment, or technology which would contribute significantly to the ability of such country to manufacture a nuclear explosive device?	NO
18.	ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. of Sept. 25 and 28, 1981, and failed to disassociate itself from the communique issued? If so, has the President taken it into account? Reference may be made to the Taking into Consider-ation memo.)	While Tanzania was represented and failed to disassociate itself, this was taken into consideration by the Administrator in the FY 1987 "Taking into Consideration" memo, dated November 14, 1986.
19.	FY 1987 Continuing Resolution Sec. 540. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?	NO

Are any of the funds to be used to pay for the performance of involuntary sterilization a a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilization? NO

Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning? NO

20. FY 1987 Continuing Resolution. Is the assistance being made available to any organization or program which has been determined as supporting or participating in the management of a program of coercive abortion or involuntary sterilization? NO

If assistance is from the population functional account, are any of the funds to be made available to family planning projects which do not offer, either directly or through referral to or information about access to, a broad range of family planning methods and services? N/A

21. FY 1987 Continuing Resolution, Sec. 528. Has the recipient country been determined by the President to have engaged in a consistent pattern of opposition to the foreign policy of the United States. NO

22. FY 1987 Continuing Resolution, Sec. 513. Has the duly elected Head of Government of the country been deposed by military coup or decree? NO

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria

FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy? — NO

2. Economic Support Fund Country Criteria

FAA Sec. 502B. Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the country made such significant improvements in its human rights record that furnishing such assistance is in the national interest? — NO

3. FY 1987 Supplemental Appropriation Act Funds. Have the project accounting information systems reports for Africa funds authorized by the ISDCA of 1985 and PL 99-440, and certification, required by the FY 1987 Supplemental Appropriations Act, been submitted to Congress? — Funds will not be obligated until there requirements are fulfilled.

5C(2) PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to all projects. Part B applies to projects funded from specific sources only: B.1. applies to all projects funded with Development Assistance loans, and B.3. applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

Zambia FY 1987 checklist was completed for Zambia Auction Support Program. Tanzania FY 1987 checklist is included in PP.

A. GENERAL CRITERIA FOR PROJECT

1. FY 1987 Continuing Resolution, Sec. 523; FAA Sec. 634A; Sec. 653(b).

   Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project.

   A CN was submitted to Congress on July 22, 1987. The congressional waiting period expired on August 6, without objection.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of $500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

   (a) YES
   (b) YES

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

   No legislation action is required in the recipient country.

4.	FAA Sec. 611(b); FY 1987 Continuing Resolution Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See AID Handbook 3 for new guidelines.)	Not a water related project.
5.	FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?	This project is not basically a capital assistance project. U.S. assistance to construct facilities will not exceed $1 million.
6.	FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.	YES. It will be so executed. Assistance will encourage regional trade and transportation.
7.	FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and 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.	(a) Project will increase the flow of international trade among SADCC countries and rest of the world. (b) It should promote private initiative and competition, particularly within SADCC region. (c) N/A (d) It will lessen the monopolistic practices of South African Railways by providing the landlocked countries of SADCC with alternative routes to the sea. (e) It will improve the technical efficiency of TAZARA. (f) N/A

8.	FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	U.S. suppliers will provide diesel electric locomotives, spare parts, tools, equipment, and technical services in support of the project.
9.	FAA Sec. 612(b), 636(h); FY 1987 Continuing Resolution Sec. 507. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.	TAZARA will provide in local currency the local costs of the Project. The U.S. does not own currencies of either Zambia or Tanzania.
10.	FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?	Tanzania and Zambia are not excess currency countries.
11.	FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	YES
12.	FY 1987 Continuing Resolution Secs. 521,522. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?	N/A

13.	FAA 118(c) and (d). Does the project comply with the environmental procedures set forth in AID Regulation 16?. Does the project or program take into consideration the problem of the destruction of tropical forests?	YES
14.	FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)?	N/A
15.	FY 1987 Continuing Resolution. Sec. 532. Is disbursement of the assistance conditioned solely on the basis of the policies of any multilateral institution?	NO
16.	ISDCA of 1985 Sec. 510; FY 1987 Continuing Resolution. For development assistance projects, how much of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?	CR requirement satisfied by other projects.

17. FY 87 Continuing Resolution, Sec. 559. Will the proposed project involve the obligation or expenditure of funds to procure directly feasibility studies or prefeasibility studies for, or project profiles of potential investment in the manufacture for export to the U.S. or third country markets in direct competition with U.S. exports, of textiles, apparel, footware, handbags, luggage, flat goods, work gloves or leather wearing apparel? Or to assist directly the establishment of facilities for the manufacture and export of such items to the U.S. or third countries in direct competition with U.S. exports?

NO

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(a), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to

a) The project focuses on improving TAZARA's capacity and efficiency to better serve producers (both small and large) in the haulage of their products to the appropriate markets.

b) Project objectives include: encouraging institutional efficiency through the transfer of technology. It is not a cooperatives development activity.

c) Project supports institutional building and encourages self-reliance of TAZARA's own resources.

d) Project supports the recruitment and training of women for TAZARA staff.

help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?

e) Encourages regional cooperation through efficiently run transportation links.

b. FAA Sec. 103, 103A, 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used?

Section 106 (SDA); YES

c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?

YES: Emphasize appropriate technology transfer through on-the-job training for 600 artisans, mechanics and other lower level staff of TAZARA.

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

Requirement is inapplicable, per HB3, App 2G, since this is a regional project.

e.	FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?	YES
f.	FAA Sec. 128(b). If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?	YES
g.	FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development, and supports civil education and training in skills required for effective participation in government processes essential to self-government.	Project assistance was requested by TAZARA on the basis of its analysis of its institutional difficiencies. A central objective of the project is to strengthen technology transfer through the technical assistance and training in skills required for effective participation in development.
h.	FY 1987 Continuing Resolution, Sec. 558. Will the proposed assistance be for any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference or	N/A

training in connection with the growth or production in the recipient country of an agricultural commodity for export which would compete with a similar commodity grown or produced in the U.S., excluding: (1) activities designed to increase food security which will not have significant impact on the export of U.S. agricultural commodities; or (2) research activities intended primarily to benefit American producers?	NO 1) NO 2) NO
2. Development Assistance Project Criteria (Loans only)	
a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest.	N/A
b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?	N/A
3. Economic Support Fund Project Criteria	
a. FAA Sec. 531(a). Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of part I of the FAA?	It will promote economic and political stability within the SADCC region by lessening economic dependency on the RSA and facilitating regional economic cooperation. YES
b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities?	NO

c.	ISDCA of 1985, Sec. 207. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such country is a party to the Treaty on the Non-Proliferation of Nuclear Weapons or the Treaty for the Prohibition of Nuclear Weapons in Latin America (the "Treaty of Tlatelolco"), cooperates fully with the IAEA, and pursues nonproliferation policies consistent with those of the United States?	NO
d.	FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?	No proceeds will accrue to any country from the sale of commodities financed under the project. The commodities financed will be used by TAZARA and not sold.

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

1.	FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?	YES. Small businesses are eligible as suppliers of tools and equipment and may receive consideration as subcontractors under the technical assistance component of the Project.
2.	FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him?	YES
3.	FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?	Neither Zambia nor Tanzania discriminate against Marine insurance companies authorized to do business in the U.S.
4.	FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)	N/A

5.	FAA Sec. 604(g). Will construction or engineering services be procured from firms of countries which receive direct economic assistance under the FAA and which are otherwise eligible under Code 941, but which have attained a competitive capability in international markets in one of these areas? Do these countries permit United States firms to compete for construction or engineering services financed from assistance programs of these countries?	NO
6.	FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent that such vessels are available at fair and reasonable rates?	NO
7.	FAA Sec. 621. If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?	YES YES

8.	International Air Transport Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U. S. carriers be used to the extent such service is available?	YES
9.	FY 1987 Continuing Resolution Sec. 504. If the U.S. Government is a party to a contract for procurement, will the contract contain a provision authorizing termination of such contract for the convenience of the United States?	YES

B. Construction

1.	FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services to be used?	Design and supervision services will be procured locally for the limited construction to be done under this Project, and these services will be financed by TACARA.
2.	FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?	YES
3.	FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million (except for productive enterprises in Egypt that were described in the CP)?	N/A

C. Other Restrictions

1.	FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?	N/A

2.	FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?	N/A
3.	FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the communist-bloc countries?	Annex U of the PP contains a justification that this project is in the best interests of the United States.
4.	Will arrangements preclude use of financing:	
a.	FAA Sec. 104(f); FY 1987 Continuing Resolution Secs. 525,540. (1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practive abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; (4) to lobby for abortion?	(1) YES (2) YES (3) YES (4) YES
b.	FAA Sec. 488. To reimburse persons, in the form of cash payments, whose illicit drug crops are eradicated?	YES

c.	FAA Sec. 620(g). To compensate owners for expropriated nationalized property?	YES
d.	FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?	YES
e.	FAA Sec. 662. For CIA activities?	YES
f.	FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained?	YES
g.	FY 1987 Continuing Resolution, Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for military personnel?	YES
h.	FY 1987 Continuing Resolution, Sec. 505. To pay U.N. assessments, arrearages for dues?	YES
i.	FY 1987 Continuing Resolution, Sec. 506. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending)?	YES
j.	FY 1987 Continuing Resolution, Sec. 510. To finance the export of nuclear equipment, fuel, or technology or to train foreign nationals in nuclear fields?	YES

k.	FY 1987 Continuing Resolution, Sec. 511. Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	NO
l.	FY 1987 Continuing Resolution, Sec. 516. To be used for publicity or propaganda purposes within U.S. not authorized by Congress?	NO

ANNEX E - TECHNICAL ANALYSIS

1.01 Design Criteria

The TAZARA railway has a 1.067 mm gauge throughout its entire length of 1,860 kms, and is connected to the Southern African Railways network through Zambia Railways which also has the same gauge. The line is a single track, except for passing bays and at stations.

TAZARA connects 51 stations in Tanzania and 42 in Zambia between Dar es Salaam and Kapiri Mposhi. It passes through 22 tunnels, most of them located between Mlimba and Makambako in Tanzania (the longest tunnel is 820 meters long).

Design criteria has a minimum radius of 300 meters, except for one short section where it is 250 meters. The maximum super elevation is 100 mm. The ruling gradient is 1% except on the Limba-Chozi section where it is 2%. The track consists of 12.5 meter rails weighing 40 kg per meter, joined with 6-hole fish plates to form a suspended joint and uniblock pre-stressed concrete ties (sleepers) of 191 kgs in weight. Stone ballast of 25 mm to 70 mm is used under the sleepers to a the depth of 250 mm.

The design axle load of 20 tons has a provision for special loading of 22 tons per axle. Depending upon the terrain, design speed varies from 40 km per hour to a maximum of 70 km per hour.

The TAZARA railway line is theoretically designed to carry 2.5 million tons per year in each direction, but has a practical limitation of 3.0 million total. These design limitations are due to single track construction, number of operational stations, number of sidings, number of passing bays, hilly terrain, and long haulage distance. (The maximum operational capacity, i.e. the maximum number of trains a day has been worked out at 11 pairs taking into consideration the present number of operational stations). With the current available motive power the present annual haulage capacity is about 1.2 million tons and project added motive power will increase this to 2.1 million tons which is less than maximum.

1.02 Train Working Performance

Train working performance has varied along with the volume of Zambia's imports and exports (copper is the main export commodity carried on TAZARA).

Goods traffic carried by TAZARA is shown in Table 1 for the years 1976 to 1986, beginning in July 1, 1976, on commissioning of line, and reflect fluctuating economic conditions as well as problems caused by the declining availability of Chinese-built locomotives.

Passenger traffic is shown in Table 2. Although the number of daily passenger trains has decreased since 1980, passenger traffic has remained relatively steady except for 1982 when motive power was at its lowest.

Table 3 depicts the utilization of locomotives, and reflects the decrease in fleet availablity between 1980 and 1982. An item of interest in this table is the average speed of locomotives which has varied between 38.6 and 42.3 km/ph. This is a low speed for a railway.

Table 4 presents locomotive productivity in kilometers run and tons carried. This shows gross tonnage in 1980/81 to be about 50 percent of the tonnage carried in 1976/77 and 1984/85.

1.03 Locomotive Power

A total of 85 DFH2 type Chinese built diesel hydraulic main line locomotives and 17 DHF1 type Chinese built shunting locomotives were made available to TAZARA on the commissioning of the railway line. In 1979, 12 additional DHF2 mainline Chinese locomotives were purchased on credit from the Peoples Republic of China by TAZARA. This additional locomotive power improved productivity and the locomotive utilization rate increased rapidly. In its 10 to 11 years of operation, 31 DHF2 locomotives were written off by TAZARA

due to a combination of factors, such as accidents, poor maintenance, human and mechanical failures, and a lack of replacement and spare-parts, thereby reducing the total number of mainline locomotives from 97 to 66. This resulted in a reduction in total haulage capacity on the system.

Since 1981 TAZARA has started a program to repower DHF2 and DHF 1 Chinese locomotives with MTU (German) engines. Repowering of damaged inoperative locomotives was performed in the Dar es Salaam workshop while repowering to operative locomotives was mainly done in the Mpika workshop in Zambia. Presently, 20 mainline locomotives and 2 shunting locomotives have been refitted with MTU engines. By July 1987, 2 more mainline locomotives will be repowered, completing the program. TAZARA's retrofitting program, which included technical assistance, was financed from its own resources. In addition, the Federal Republic of Germany between 1983 and 1984 supplied 14 diesel-electric (DE) U30 locomotives with a rating of 3,200 horse power. These are General Electric (GE) U30C locomotives manufactured under GE licence to Krupp Company of West Germany. Three of these locomotives have been damaged, one beyond repair, and two are in the process of being repaired. Table 5 summarizes the status of condition of mainline and shunting locomotives, including numbers of damaged, retrofitted and new diesel electric locomotives. Table 6 describes availability percentages of locomotives between 1985 and 1986 and Table 7 lists

the latest availability rates (late 1986/early 1987). (Note: Availability is defined as the total fleet less the number of locomotives undergoing routine maintenance and repairs. The availability rate is the number of locomotives in operation divided by the total fleet. Utilization refers to distances that a locomotive covers in a specific timeframe. Repairs are those beyond planned maintenance and are usually the result of breakdowns or accidents.) Table 8 ties in all locomotive parameters for February 1987.

Since the inception of operations on TAZARA, the Chinese locomotives have failed to perform according to their design capacity (they were never sufficiently tested in Tanzanian and Zambian field conditions for response to local humidity, altitude, continuous long grades, sharp radius curves). In addition, the horse power of Chinese locomotives, although specified as 2000 HP, has in reality worked out to about 1200-1500 HP under field conditions.

The Chinese-manufactured locomotives that were not repowered have been partially rehabilitated. The current availability of those original Chinese locomotives is rated at 40%, while those retrofitted MTU locomotives and KRUPP diesel electrics are rated at 70% and 74% respectively.

The re-engining work on mainline locomotives was performed starting in 1981 as follows: Program completion date is July 1987.

1981	4
1982	2
1983	12
1984	2
1985	2
1986	2
1987	2 in process
Total	26

Note: Basically, the re-engining program consisted of replacing the original Chinese-built factory engines with 2 MTU engines rated at 1,000 HP each. Once the program began, it became obvious that some modifications to the cooling systems and transmissions of the Chinese-built locomotives were also necessary. Thus the original terms "re-engining" and "retrofitting" used by TAZARA were replaced by the term "repowering" to reflect the additional modifications required to actually put the locomotives in service. In this paper, the terms are used interchangeably.

The three types of mainline locomotives and their operational status as of April 15, 1987, are set forth below:

	In Operation	Out of Service	
		Repairable	Scrap
DFH2	30	11	-
DFH2 MTU	25	1	-
U30C KRUPP	11	2	1
	66	14	1

(NOTE: The above quantities were provided by Mr. Mkamba, Principal Mechanical Engineer (PCE), and confirmed by MTU and KRUPP representatives, as well as the Chinese Chief Mechanical Engineer (CME). Since the figures are as of 1987, the 31 mainline locomotives which were scrapped in previous years are not reflected in the chart.)

The phrase "in operation" from the above listing does not signify that the locomotives are available for daily train services. "Availability" is the true measure of readiness to haul freight or passenger trains. The difference between the number of locomotives "in operation" and those "available" is that locomotives undergoing scheduled maintenance, servicing, held in workshops for missing parts, wheel truing, and other maintenance delays are considered "in operation" but "not available."

1.031 Locomotive Failure Summary

See Table 9 for monthly breakdown by major components. The table summaries compare DFH2, DFH2/MTU and DE Krupp (U30C). DE Krupp failures are approximately 50% of DFH/MTU and 25% of DFH.

1. Failures on Chinese engines include leakages (water and oil), cracking of pipes, damages to crankcases, cylinder heads, and turbocharges.

2. All failures on MTU engines have been due to airlock.

3. Failure rates on conventional locomotives and repowered locomotives (excluding engine failures) take the same pattern.

4. All but one engine failure on U30C diesel electric locomotives have been due to crankcases over-pressure.

5. The most common failure of U30C locomotives is wheel slipping. These locomotives are equipped with a motor speed panel which detects wheel slips and subsequently reduces engine load so as to protect the locomotive wheels and rails. Such equipment is not installed in the other locomotives, hence wheelslips do not feature as failures though the locomotives also do slip. The majority of wheelslips are due to wet rails (oily or when covered with dew) lack of sand (finished) or blocked sanding system.

1.04 Goods Wagons

At hand-over, TAZARA received a total of 2,066 wagons and 83 brakevans. (See Table 10E). All wagons are equipped with dual braking systems (air and vacuum). The availability of wagons is relatively low due to a number of factors, including long turn around times, the imbalance between export and import cargo which results in wagon retention by Zambia Railways, an increasing need for container wagons to meet the growing demand for containerized cargo and, to a lesser extent, accidents. An additional need of 1,020 wagons has been identified by TAZARA. The Government of Sweden, through SIDA, analyzed wagon requirements and has agreed to procure 375 wagons with grant funding. SIDA accepts that more wagons are needed but has not made a commitment to fund the remaining requirement. TAZARA has an existing program for repairing and containerizing wagons.

Wagon turnaround time on Zambia Railways is an important factor affecting TAZARA's total capacity and efficiency. Obviously, wagons and locomotives go together, and as long as TAZARA's wagons are held in Zambia for unduly long periods, TAZARA's performance will be adversely affected. Under the IBRD-coordinated Fourth Railway Project, this problem is being addressed through the provision of wagons and technical assistance in operations for Zambia Railways. This project should improve the flow of wagons with the Zambia national rail system and obviate the need to retain TAZARA wagons on the internal system, thus providing an important side benefit to TAZARA

1.05 Location, Size and Physical Condition of Workshop and Stores

TAZARA has fully equipped locomotives and rolling stock repair workshops and running sheds and stores at Dar es Salaam and Mpika. There is also a light repair and routine maintenance workshop for Chinese locomotives at Mbeya, Tanzania and locomotive turn around depots in Mlimba, Chozi and Kapiri Mposhi. Mbeya is currently being used to carry out routine maintenance and repair of the GE/Krupp diesel electric locomotives.

Storage and workshop facilities at Dar es Salaam and Mpika for the Chinese locomotives and wagons are almost identical. The main material stores are at Kurasini (near Dar es salaam) in Tanzania and Mpika in Zambia. The Kurasini material store is a large fenced complex of more than 10 hectares consisting of an office building, 6 enclosed storage sheds, one open storage shed and an open area for storage of heavy equipment served by an overhead crane. The site has a rail link to the main line.

The Dar es Salaam locomotive and rolling stock repairs work facility is a large site of approximately 20 hectares. It contains the following facilities:

a. Locomotives
- Locomotive Shop
- Light Repair Shop
- Painting Rooms
- Operation Preparation Room

b.	Rolling Stock	- Coach Shops
		- Dismantling Shed
		- Wagon Shops
c.	Forge and Foundry	- Forging Shop
		- Foundry Shop
		- Pattern Shop
		- Shot Blasting Room
		- Ancillary Room
		- Heat Treatment and Electro Plating Shop.
d.	Auxillary	- Diesel Engine and Hydraulic Transmission Shop
		- Diesel Engine Testing Station
		- Hydraulic Transmission Testing Station
		- High Pressure Oil Pump and Ancillary Room
		- Pipe Phosphorous and Battery Charging Shop.
e.	Technical	- Measurement Room
		- Central Laboratory

f. Stores
- Storeroom for Purchased Components
- General Storeroom
- Chemical Product Storeroom
- Foundry Materials Storeroom

g. General Office Block

The workshop comes under the Mechanical Engineering Department. Although the stores personnel are within the Mechanical Engineering Department's workshop, they are responsible to the Supplies Department.

Workshops at Dar es Salaam and Mpika are fully equipped to carry out major repairs of diesel-hydraulic locomotives and wagons. They are not equipped to perform. All the stores visited were generally dry and tidily kept. There were no obvious fire hazards. All equipment were found to be in good condition and operable.

Each store is under the control of a storekeeper. All the stores visited by the PP team and IQC locomotive specialist were adequately secured and the keys held by the storekeeper. Each store had a small office section with desks for the storekeeper and tally clerk and filing cabinets for the tally cards and store documents. All the stores had adequate racking and individual stock items were identified by bin labels. Both complexes were fenced and had security personnel on the entrances. However, gate passes were not employed and there was no evidence of any random

checking of departing vehicles. In this respect, opportunities exist to further strengthen the safeguarding of inventories from pilferage.

All physical facilities are well designed, structurally sound and building configurations are functional. All workshops are equipped with gantries of varying loads depending upon the type of work to be carried out. Both Dar es Salaam and Mpika workshops, however, are actually over-equipped in relation to the demand for maintenance requiring special equipment.

The workshop facility at Mbeya includes a main workshop building for general repairs of diesel electric locomotives and minor running maintenance on Chinese locomotives and rolling stock. The gantry crane has a 5-ton capacity. Auxillary testing laboratories for diesel-injection, electrical/electronic and hydraulics are in an annex to the main workshop building. Sand cleaning and drying facilities are also located in the same area.

Other facilities at Mbeya include a small foundry and smithery workshop, a spare-parts storage area, and a compressor and overhead covered area for locomotive running and casual repairs.

The Mbeya workshops have some equipment intended for maintenance of Chinese locomotives which is rarely used. Testing equipment for the major overhaul of diesel electric locomotives does not exist.

The spare-parts, stocking, inventorying and recording appeared to be well managed at this depot. A spot-check of record cards indicated an up-to-date inventory of the parts. The physical condition and control of the storage facilities are satisfactory. However, the introduction of a few minor security features could considerably improve the existing security system.

1.06 Current Maintainance Capabilities

The repair and maintainance of track, sleepers, drainage structures, bridges, tunnels, roadbeds, slopes, etc., are carried out by the Civil Engineering Department of TAZARA.

The Civil Engineering Department has developed effective maintainance and repair schedules for all civil works within TAZARA's operational boundaries. Each workgang is responsible for routine maintainance of 30 km stretches. The District Engineer carries out inspections quarterly, the Resident Engineer bi-annually and the Chief Engineer once a year. Routine maintainance includes checking of the condition of rails, and if required, the replacment of ballast and sleepers, fastening of the rails, cutting of grass, cleaning of drainage structures, repairing of route signs, etc.

Limited funding and inadequately trained and inexperienced staff recruited from the original TAZARA construction work-force to run and maintain TAZARA's operations have contributed to repair and maintenance inefficiencies. These have resulted in some derailments of trains and reduced locomotive availability. At the current time, the repairs carried out by TAZARA are of an emergency nature to keep the track open. Routine and preventive maintainance is not carried out on schedule due to lack of funding. The African Development Bank (ADB) has pledged funds for rectification of landslides and the EEC and Sweden have undertaken to provide both manpower and equipment for crushing of ballast at various quarries.

1.07 Constraints to the Operation of TAZARA

Lack of adequate locomotive power has been and continues to be a major operational constraint for TAZARA. The mainline diesel-hydraulic locomotives are insufficiently powered to meet the requirements of the hilly terrain. There have been numerous breakdowns and low rates of locomotive availability. Availability of locomotives was highest at 61% during 1977/78, and was at its lowest at 24% in 1980/1981. Thereafter, it increased to 37% in 1985/86. Reasons for the poor availability rates over the past several years include:

1. increasing deterioration, with age, of the original Chinese locomotives;

2. inadequate technical manpower in the maintenance workshops and the support supplies functions combined with low manpower work output in Tanzania; and

3. shortages of vital spare parts, tools and materials caused by a severe foreign exchange scarcity both in Tanzania and Zambia; and

4. inadequate workshop procedures stemming from poor management.

1.07 Analysis of Equipment and Physical Facilities:

1.071 Locomotive needs

In the report, "Ten Years of TAZARA Operations," dated July 1986, the availability of mainline locomotives in 1977/78 is listed at 52. This availability decreased to 25 in 1981 and then increased to 37 in 1986. The increase is attributed to the 14 new KRUPP/GE U30C locomotives supplied in 1983/84.

Obviously, low locomotive availability rates have a negative effect on rail services, carrying capacity and costs. The lower the availability, the higher the stock of locomotives required to carry a given volume of traffic. For example, availability in the range of 50-60% implies a need for a stock of locomotives nearly two-thirds larger than if availability were about 90%. This points out the vital need for actions by TAZARA to improve the performance in workshops to raise the quality of locomotive maintenance and service work.

Although TAZARA has many technically well qualified people who are dedicated to their work, the increased production by foremen, artisans, fitters, electricians and other employees is a must.

Observations by the PP design team and IQC engineer in Dar es Salaam during periods when shop activity should have been high indicated that less than 20% of the staff were working and supervisors were not enforcing work discipline. Also, the absence of effective controls of material availability, production, quality and work planning is resulting in low workshop performance. A study by Canadian Pacific Consultancy Services, Ltd., and a study funded by SIDA assessed performance as "acceptable," an assessment that did not coincide with the observation of the PP team.

Variations in forecasts of freight demand range from 1.5 to 1.9 million freight tons for year 1990/91 to a total of 2.5 million freight tons by 1995/96. Forecasts of passenger traffic also

vary considerably from an actual of 1.16 million passengers in 1985/86 to a total of 1.8 million for year 1990/91 and a total of 2.6 million passengers by 1995/96.

TAZARA's actual experience of freight traffic since operational take-over has ranged from to a high of 1,273,000 tons in 1977/78 to a low of 952,000 tons in 1980/81 . During the last three years of the Ten Year Period, the freight has levelled out to just under 1.2 million tons per year. An increase in demands are forecast by TAZARA as well as groups who have studied the growth patterns of Zambia and Tanzania. If the Benguela Railway in Angola is rehabilitated, it could provide some competition with TAZARA for freight haulage from Zambia's copper belt.

Design Calculations

For the purposes of establishing parameters for this locomotive study, TAZARA's freight demand forecast is 2.1 million tons for 1992/93, to reach 2.5 million tons by 1995/96. Other parameters set for this study:

* Maximum ton haulage per train (including deadweight of rolling stock)	-	950 tons
Net tons per car -	-	33 tons
Targeted locomotive availability	-	70%
Targeted wagon availability	-	65%

With a maximum load of 950 tons per train, the average cargo load would be 650 tons (for a total cargo of 1.9 million tons).

No. of trains per year (100% availability) 2,120,000 divided by 650 = 3,262

No. of trains per day (100% availability) = 3,262 tons divided by 365 days = 9 trains (5 and 4 in each direction on alternate days)

(365 days. No Contingency)

Actual mainline locomotive availability (see Table 7) during the six month period October 1986 - March 1987 are set forth below:

	TANZANIA REGION	ZAMBIA REGION	TAZARA
DFH2	33.5%	61.6%	47.6%
DFH2/MTU	61.6%	78.2%	69.9%
DE U30C	60.0%	86.9%	73.5%

* These limits have been established by TAZARA

Summary of Locomotive Requirements:

For purpose of this Project Paper, the use of Diesel Electric Locomotive Quantities and Equivalent Diesel Electric (1 DE = 2 DFH2) is used, this being a normal practice in TAZARA. One 950 ton train load is pulled by one DE locomotive or two Chinese locomotives. From Table 11E, the train is pulled in one direction by 18 DFH2 from Dar es Salaam to Mlimba, 9 DE from Mlimba to Chozi and 18 DFH2 from Chosi to New Kapiri.

NOTE: This is based on using diesel electrics hauling trains from Mlimba to Mpika without a locomotive change but with possible refueling at Chozi.

Dar to Mlimba	DFH2	18	Equivalent	DE 9
Mlimba to Mpika	DE	9		9
Mpika to New Kapiri	DFH2	18	Equivalent	DE 9
Total Equivalent				27

Assuming availability of 70%,
35 DE locomotives shall be required
(39 x 0.7 = 27.3) to compensate 30%
loss in availability 39 DE's or 78 DFH2.

Using the Above Method of Analysis:

		DE or Equivalent
Main line locomotive needs	1991/92 =	39
	1995/96 =	45

The Present Fleet:

	Fleet Quantity	% Avail	Service Quantity	DE/ Equivalent
DFH2	30	47	14	7
DFH2/MTU	25	70	17	8
DE	11	73	8	8
	66	63	39	23

* Does not include a quantity of Two (2) U30C which have been deemed repairable but will most likely not be operational until 1988.

Theoretically, the present fleet size should be sufficient for 1986/87 freight haulage requirements. With anticipated increases traffic demand through 1995, an additional increase in fleet size "equivalent" to 23 more diesel electric locomotives will be needed (provided the DFH2 and DFH2/MTU are properly maintained and continue to operate). The increase in fleet size by 17 to meet 1992/93 traffic demand forecasts provides seasonal fluctuations in freight cargo demand.

The following illustrates the locomotive need by year in relation to the existing fleet:

Summary Mainline Locomotive Needs				Existing Fleet		
Year	Freight (million tons)	Equiv. DE's	Equiv. DE's	Passenger Demand	Avail. for Freight	Loco. Need Equiv. DE's
86/87	1.20	22	23	2	21	1
87/88	1.50	27	23	2	21	6
88/89	1.64	30	25*	2	23	7
89/90	1.77	32	25	2	23	9
90/91	1.91	35	25	2	23	12
91/92	2.01	37	25	2	23	14
92/93	2.12	39	25	2	23	16
93/94	2.23	41	25	2	23	18
94/95	2.35	43	25	2	23	20
95/96	2.44	45	25	2	23	22

*includes the two U30C currently under repair which will be operational in 1988.

The life expectancy of the re-engined DFH2 mainline locomotive is estimated to be 10 years from the date of retrofitting, provided that transmission, compressor and engine cooling systems are modified. This estimate is based on maintenance records, inspections and observations of the equipment's present condition.

With improvements in maintenance practices as a result of technical assistance and training, approximately 20% of the calculated increase in fleet size could be made up with increases in availability of existing locomotives. Additional increases in availability could also be realized though reallocation of work by workshop, additional re-engining, and adequate technical training and discipline among train drivers. TAZARA productivity plans for 1986-7 are shown in Table 12.

AID is proposing that wagon and coach maintenance and repair be concentrated at the Dar es Salaam workshop and maintenance and repair of Chinese locomotives be performed at the Mpika shop. The more simple work will be concentrated at Dar and the more complex locomotive work at Mpika where work is more efficiently carried out.

TAZARA's workshop crew is well experienced in retrofitting DFH2 main line locomotives with German MTU engines. Generally, a properly and thoroughly rehabilitated DFH locomotive has a proven service life of 10 years.

The retrofitting program can further augment locomotive availability by re-engining 10 of the 12 DFH2 locomotives purchased in late 1979. These 10 DFH2 are still operational. The Project design team strongly recommend that TAZARA continue the repowering of the remaining 10 DFH2 locomotives with German MTU engines as soon as possible, either through TAZARA's own funding or through other donor assistance.

After retrofitting MTU engines to the 10 DFH2 locomotives, the remaining operational DFH2 locomotives should be assigned to shunting/yard duties and non operational DFH2 units should be cannibalized for repairs of other operational units.

1.072 Support Activities - TAZARA

Increases in motive power through addition of new diesel electrics with possible additional re-engining of additional Chinese DFH2 locomotives will reduce some short range problems TAZARA may experience if freight and passenger traffic demands increase. Increased availability, however, can only be fully achieved by improving the productive capacity of workshops and depots. Greater discipline and controls in workshops, strict adherence to maintenance schedules and cost control, and ehanced efficiency of workshop operations themselves are necessary.

Both the long-term technical advisor provided by the supplier of new locomotives and short-term experts under the railways management contract will assist in resolving workshop problems such as improper storage, poor inventory records, worker performance and shop equipment layout.

In discussions with key management and supervisory TAZARA personnel lack of shop supplies, spare parts or good quality consumable parts (such as correct gaskets) were cited as reasons for incompleted or poor work, resulting in low availability of locomotives.

Most items, however, are low cost and easily obtainable. Shop supply items such as welding rods, various sizes of steel, emery cloth and acetylene are usually available locally. An effective

local procurement and cost-control system could significantly reduce some of the bureaucratic delays and bottlenecks and increase the lead time for local procurement. The introduction of a "Petty Cash" voucher system would reduce the delay in completing maintenance tasks which contributes to the low availability of main line locomotives.

To address these differences, all of which have negative impact on locomotive power availability, a thorough program of support to improve workshop and worker productivity needs to be introduced and implemented. The support activities required are improved management systems to establish formal control of:

-- material and spare parts availability
-- stock control - bin reserve/recorded points A.B.C.
-- storage security procedures
-- advance order routines
-- material/work expediting
-- production scheduling and reporting
-- work standards, planning, measurement and incentives
-- performance measure
-- quality measurements
-- effective inspections of material and work
-- quality documentation
-- employee understanding of job responsibility and contribution
-- employee morale
-- incentive rewards

1.073 Justification for Technical Assistance

TAZARA has the capability and knowledge to correct many of the deficiencies noted above. Some forms of control systems are being applied, together with maintenance and repair productivity plans (see Table 12E). However, many inconsistencies exist from workshop to workshop. To improve these basic control systems, TAZARA requires professional guidance and technical assistance.

Assistance in management systems is required to review present control systems, determine the need and type of management systems best suited for TAZARA, and to develop and help implement needed procedures. The technical advisors should be experienced with material and production controls, as well as work planning, productivity measurement and quality control. The estimated time required for conducting such an effort is four months for each specialist. This includes an estimated one-month start-up period.

The overall management control effort will require a professional to oversee the materials, production, work planning and quality systems development. The time period for short-term systems development and implementation is estimated at six months. An individual in this capacity would also coordinate the control systems and assure compatibility and necessary degree of consistency from workshop to workshop. The management control specialist should have access to the General Manager's office and report to the Deputy General Manager.

The improvements to be gained by developing and implementing management control systems covering the four major control areas will not be sustained unless a supporting program of follow-up training and systems monitoring is in place. The short term effort of three professional specialists is estimated to take a period of four to six months as described above. This effort will allow for the development of basic procedures, instruction documentation and initial training and monitoring. Such efforts will be effective only as long as a monitoring system is established and implemented.

To assure sustained improvements, it is recommended that the technical assistance be continued for a total period of three years. The Management Control Specialist will assist TAZARA in their efforts to improve, modify, implement and train for continued effectiveness of control systems. The systems developed at Mbeya will be implemented by TAZARA at the workshops in Dar es Salaam and Mpika as well as all the depot locations..

Each of the major control areas -- materials, production, work planning and quality -- will require long term efforts for desired improvements. The greatest dificiency at present is the lack of a functioning quality assurance or control system. TAZARA management, supervisory personnel must be trained to be quality minded.

In summary, the development, implementation and monitoring of management control systems is essential to increasing the availability of motive power in TAZARA's operation. The addition of new locomotives, equipment, spare parts, and shop equipement will not have a lasting effect on improved operations unless their use is controlled effectively.

1.074 Equipment Recommendations

After duly considering TAZARA's present operations, forecasts of increased haulage, performance and efforts to improve the overall operation, the consultant recommends for this project:

-- 17 diesel electric locomotives, the first 8 to be provided in 1989, and the second 9 to be provided in 1991;
-- normal consumable spare parts for routine maintenance of above locomotives;
-- protective spare parts with sufficient quantity/type for the four-year overhaul of each locomotive
-- capital spare parts;
-- spare parts for existing quantity of 13 GE/KRUPP U30C locomotives sufficient for the four year overhaul and repairs;
-- GE technical assistance for 3 years;
-- spare parts for the existing MTU diesel engines, funded by TAZARA;

-- spare parts for DFH2 locomotives from U.S. sources Have parts manufactured per drawings provided by TAZARA at quantities shown as per lists (either TAZARA or AID funding);

-- workshop equipment for a new workshop at Mbeya consisting of testing equipment and other shop equipment compatible with newly purchased DE locomotives.

Efforts have been made, both by A.I.D. staff and an IQC consultant, to identify suitable diesel engines manufactured in the United States for re-engining of the DFH2 locomotives. Four interested manufacturers were contacted. Their engines, however, cannot be fitted without complicated modifications in mounting, engine loading system, transmissions and cooling system. Furthermore, as recorded in the program to repower with MTU engines, about two years is required to "de-bug" the retrofitted locomotives. The IQC consultant and the PP team have concluded that additional time and costs do not justify placing new engines in the original Chinese-built locomotives.

Retrofitting of MTU engines in the DFH2 locomotive fleet has proven successful in all respects -- fit, mounting, transmission line-up, cooling arrangement and above all, actual operation on the railroad. To date, the MTU-powered locomotives have accumulated over 290,000 running hours with acceptable performance. Based on the above, the application of another manufacturer's engine is not recommended.

1.08 Justification of the Proposed Project Components

In each of the preceding sections the alternatives for increasing the motive power have been explored and analyzed. The addition of new locomotives and maintenance of the existing fleet is required if TAZARA is to meet its forecasted haulage requirements.

To increase locomotive availability, increased operational efficiency and workshop output is required, as well as work reallocation by workshops and remodelling of the workshop at Mbeya.

1.081 Procurement of New Locomotives and Spare Parts

The U30C GE/Krupp diesel electric locomitives have been in service for approximately three and one-half years. The operation of these locomotives, particularly on the 2% grade sections, has been acceptable. The GE locomotive characteristic curves show that the GE/Krupp locomotive is an excellent fit for the services demanded by TAZARA. A change to a different kind of locomotive at this point would require at a minimum, two years of testing under operating conditions running-in to ascertain various problems, defects, vulnerability of various components in different terrain and conditions. Further difficulties are foreseen in both the driving part as well as the maintenance. In addition, maintenance and repairs for the U30C units are knewn by the Mbeya shop personnel, and locomotives of a different

manufacturer and different kind would compound the routine maintenance and repair problems. It would also mean additional parts and special equipment.

Spare parts including those needed for the 4-year maintenance of the new locomotives is proposed. Parts for the 4 year maintenance of the existing GE/Krupp locomotives and repair parts for 2 damaged GE/Krupp locomotives are also proposed. In addition, technical assistance from GE for a period of 3 years would assist in demonstration and on-the-job training of DE technicians at Mbeya. Spare parts are shown in Annex M.

1.082 Work Reallocation by Workshop

Numerous documents concerning TAZARA's production plans, annual maintenance and repair plan, performance reports, locomotive repair records, equipment performance reports, fuel consumption/oil consumption records, and defect summaries by locomotive have been reviewed and analyzed during the study efforts. Interviews with key managers of different workshops, the Chief Mechanical Engineer and members of his staff have provided descriptions of work and performance patterns. Conclusions drawn from the above information and personal observations clearly indicate that the workshops located at Mpika are currently better managed, better staffed and more productive than Dar es salaam workshops Mpika represents greater existing capacity, greater output per employee, greater output per-square meter and a lesser capacity-development requirements to raise performances to totally

acceptable levels. For these reasons, all DFH1 and DFH1/MTU, DFH2 and DFH2/MTU locomotives light and heavy maintenance repair work should be reallocated and assigned exclusively to Mpika workshops.

The Mbeya locomotive repair shops performance exceeds that of Dar es Salaam. Tours of the Mbeya facility and discussions with the District Mechanical Engineer and his staff point to a greater interest by Mbeya employees in their work, in improvements and in overall work ethics which more closely conforming closer to acceptable standards of workshop conduct.

The Mbeya facilities are designed, built and equipped to provide for the routine maintainance and light repair works required for diesel hydraulic locomotives. The workshop building covers an area of 1134 square meters (21m x 54 m). Since the acquisition of DE-U30C engines and retrofitting of Chinese locomotives with MTU engines, some equipment has been added to this workshop to cater for some light repair and maintainance works on Diesel-Electric (DE) engines. It should be noted that heavy workshops at Dar es Salaam and Mpika are equipped only to carry out major repair and maintenance work on Diesel Hydraulic (DH) locomotives. In this respect, the present layout of the equipment and the equipment itself are not suited to carry out any major or minor repair works on DE locomotives. Although the equipment and the workshop facilities at Dar es Salaam and Mpike are underutilized, the present equipment cannot be used for major overhauling of DE locomotives without modification of physical facilitie

TAZARA currently has plans to built an entirely new physical facilities at Mbeya with compatible equipment for heavy maintenance work on DE locomotives. The maximum numbers of DE locomotives are assigned to the Mlimba - Chozi section of TAZARA rail lines, and Mbeya is located in the middle of this (prevailing 2% grade) section.

The conclusion drawn from inspections and interviews with the workshop personnel indicate that the proposed DE locomotive workshop for heavy duty repair works should be built and equipped as an extension at Mbeya. The land area and central location for proposed expansion, as well as the availability of sufficient electricity and water makes Mbeya ideal for the proposed facilities.

1.083 Expansion of Existing Workshop

The proposed building would consist of an area of about 1460 sq. m. (27m x 54m) for heavy repair work on DE locomotives. The flooring will be provided with one through and two dead-end tracks. Each track will have an under-floor pit arrangement similar to the existing facility. The structure will also have necessary ancillary rooms to carry out component repairs and accommodate testing equipment. The proposed expansion will be adjacent to the north wall of the existing light-repair shop. The proposed heavy repair workshop will be serviced with an overhead 30-ton gantry crane for removal and replacement of major components.

The structural and architectural features of the proposed building will conform to the design of the existing structures.

Adjacent to the north wall of the proposed HR workshop, another additional structure is proposed for the storage of parts, materials and a demonstration classroom to conduct necessary training sessions for repairs to DE locomotives. The proposed addition would be an area of about 1300 sq. meters (24 x 54 m). About 1100 sq. m. spare on the east end of the building would be used for parts and material storage and the remaining space would be partitioned for a demonstration room.

Design Cost Estimates and Construction

Architectural design of the proposed extensions shall conform with the existing building. All superstructures shall be steel structural components, roofing and walling of corrugated iron sheets. Floors shall be built to withstand movement and weight of DE locomotives.

TAZARA has commissioned an experienced and qualified local firm to carry out design work and prepare the invitation for bid (IFB) documents for the proposed construction.

Tanzania has both design and construction capacity to design and build such type of structures. In the last 5-6 years, considerable delays in completion of construction activities have been observed. Long

extensions to large contracts are more common. These delays are mainly attributed to lack of some building materials and shortages of foreign exchange. It is reasonably felt that the provision of foreign exchange for this construction activity will enable timely completion. The following cost estimates have been made on a cost per square meter basis. (Note: A review was made by AID engineers to compare the costs of constructing similar structures in Tanzania during the last six months. A review of the costs of local and imported construction commodities was also conducted.)

(i) Proposed workshop structure with a total area of 1460 sq. m. @ $400 per sq. m.	$ 584,000
(ii) Storage area and demonstration classroom with a total estimated area of 1300 sq. m @ $400 per sq. mt.	$520,000
Total Costs	U.S.$ 1,104,000

AID contribution towards this construction costs would be limited to US$400,000 for the foreign exchange costs of the building materials. All other costs would be financed by TAZARA. (This estimate does not include costs of built-in equipment like overhead gantry crane). TAZARA management has advised that the new budget currently being established contains local funds for such construction. All tender documents for

the proposed construction, prior to their release to potential contractors will be reviewed and approved by AID engineer. Any part of this construction, which is not reviewed and approved by AID, shall not be eligible for AID financing.

1.084 Training in Repair and Maintainance of DE Locomotives

The expansion of Mbeya workshops will require the addition of locomotive maintenance personnel to handle all levels of maintenanace as per the schedules established by manufacturer's instructions.

Since the acquisition of Diesel Electric locomotives, all routine maintenance work and minor repair work on DE has been performed in the Mbeya repair shop. The KRUPP/GE maintenance engineer has provided engineering service and on-the-job training (o-j-t) at Mbeya. Though proficiency is not at the level of fully trained, DE locomotive maintenance, the engineers, technicians and artisans at Mbeya are the only TAZARA personnel who have received training on DE maintenance and operation. This cadre of partially trained and experienced people will provide the nucleus for the DE maintenance work force required for the four year heavy repair of KRUPP U30C locomotives, as well as all levels of maintenance for the 21 DE's in 1989 and the entire 30 DE locomotive fleet of which will exist with the addition of 8 diesel electric units in 1989 and the 9 remainder in 1991.

The mobility of staff and qualified personnel is heavily influenced by TAZARA's national quota system. Low-level supervisory, technical, foreman and workshop personnel in Tanzania tend to resist assignment in Zambia and vice versa. However, since Mbeya is close to the Zambia-Tanzania border (120 km), the reluctance of Zambians and Tanzanians to move to Mbeya should be minimal.

With the DE locomotive fleet assigned to Mbeya and the DFH1/MTU, DFH2, DHF2/MTU locomotives assigned to Mpika, the workshops at Dar es Salaam would be available to specialize in wagon and passenger coach maintenance, repair and rebuilding. The wagon and coach work requires less mechanical, electrical and electronics skill than locomotive work and thus effectively matches Dar's current work-force qualificatons. The machine shops, forge shop and casting facility along with the furniture wood-working, would continue to function, with possible increases of production volume to serve not only TAZARA but external business requirements as well. Marketing training, in particular will assist in formulating a plan to cater for outside business needs.

In summary, the work re-allocation described above would improve the overall proficiency and utilization of TAZARA's three major work and repair shop complexes. It makes best use of personnel trained to date. The reallocation also aligns the work location with locomotive and wagon use location. It will eliminate the dispatching of empty wagons to Mpika just to provide workload for the Mpika wagon shop, as has frequently been the case.

The construction of the two workshop structures at Mbeya will provide the expanded capacity required to handle both heavy and routine maintenance for all diesel electrics.

1.085 Procurement of Equipment and Tools for Maintenance Workshop

Equipment required at Dar es Salaam would be a Davis and Metcalf (or equal) brake system component testing machine. Equipment required at Mpika would be the brake system component testing machine above plus a dynometer for testing of diesel engines. Equipment required at Mbeya would be the GE testing equipment and tools and other equipment shown in Annex M.

Tooling for the 3 workshops would be tooling that is compatible to all types of locomotives and lists will be prepared by TAZARA Mechanical Engineers Department.

TABLE 1E

GOODS TRAFFIC CARRIED BY TAZARA (000 Metric Tons)

YEAR	ZAMBIAN IMPORTS	ZAMBIAN EXPORTS	LOCAL TRAFFIC TANZANIA	LOCAL TRAFFIC ZAMBIA	TOTAL
1976/77	429	500	168	3	1,135
1977/78	425	596	236	16	1,273
1978/79	271	393	251	6	923
1979/80	204	228	325	33	790
1980/81	235	312	185	20	752
1981/82	252	328	174	42	796
1982/83	241	391	150	42	824
1983/84	294	431	190	58	973
1984/85	284	491	266	55	1,096
1985/86	181	357	385	65	988
1986/87	Estimated Actual				1,200

TABLE 2E

PASSENGER TRAFFIC CARRIED BY TAZARA

YEAR	ZAMBIA REGION	TANZANIA REGION	TOTAL	PAIRS OF TRAINS PER WEEK
1976/77	354	472	826	4
1977/78	553	581	1,134	6
1978/79	641	671	1,312	6
1979/80	533	864	1,397	6
1980/81	424	600	1,024	2-3
1981/82	384	603	987	2
1982/83	249	315	564	1
1983/84	409	789	1,198	2
1984/85	431	634	1,065	2-3
1985/86	437	723	1,161	3
1986/87	Estimated		1,300	3

TABLE 3E

LOCOMOTIVE UTILIZATION

YEAR	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86
Available (000 hrs)	448	456	342	352	201	219	258	270	301	322
% of Fleet	60	61	46	41	24	26	30	35	43	46
Total Turn-round time (000 Hrs)	175	226	130	103	149	161	159	180	189	175
% of Available Utility	39.1	49.6	30.0	29.3	74.1	73.5	61.8	66.8	62.7	54.4
Net Running Time (000 Hrs)	99	166	60	45	46	56	78	81	85	79
% of Total Turn-round	56.6	46.9	426.2	43.7	30.9	34.8	49.3	44.8	45.0	45.1
Average Turn-round (Hrs).	31.4	36.2	38.5	40.3	35.8	36.6	36.0	39.7	40.2	41.4
Speed (Km/Hr).	41.7	43.7	41.5	42.3	41.6	41.0	37.8	40.3	38.6	38.7

TABLE 4E

LOCOMOTIVE PRODUCTIVITY

YEAR	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86
TOTALS: Locomotives Kms in (000s)	6666	7501	5710	4871	3942	4263	4211	4450	4698	4512
Lead Locomotives Kms. (000s)	4126	4643	2494	2388	1933	2278	2949	3192	3386	3051
Gross Ton Kms. (millions)	2879	3120	2101	1889	1516	1798	2183	2522	2927	2596
AVERAGE: Daily Running	566	491	461	441	455	470	438	448	451	450.7
Daily Output (1000 ton Km.)	349	248	270	316	251	267	274	320	336	308
Average Haulage (Tons)	697	672	843	791	793	790	739	800	802	734

TOTALS

TABLE 5E
TAZARA: TOTAL LOCOMOTIVES - APRIL 1987

ITEM NO.	TYPE	CLASS	TOTAL NUMBER PURCHASED	REENGINED OR IN PROCESS	DAMAGED TOTAL NO.	DAMAGED REPAIR-ABLE	DAMAGED NOT REPAIR-ABLE	OPERATING
1.	DFH2	DH, MAIN LINE	97	26	41	10	31	29
2.	DFH1	DH, SHUNTER	17	2	2	1	1	13
3.	DFH2/ MTU	DH, MAIN LINE		26	-1	1		25
4.	DFH1/ MTU	DH, SHUNTER		+2				2
5.	KRUPP	DE, MAIN LINE	14		(3)	2	1	11
	TOTAL		128	28	47	14	33	80

TABLE 6E

TANZANIA ZAMBIA RAILWAY AUTHORITY

MOTIVE POWER AVAILABILITY FOR THE YEAR 1985-1986

MONTH	TANZANIA REGION								ZAMBIA REGION							
	TOTAL LOCOS DAYS ALLOCATED				PERCENTAGE LOCO AVAILIBILITY				TOTAL LOCOS DAYS ALLOCATED				PERCENTAGE LOCO AVAILABILITY			
	DE	DF/MTU	DFH2	DFHL	DE	DF/MTU	DFH2	DFHL	DE	DF/MTU	DFH2	DFHL	DE	DF/MTU	DFH2	DFHL
July 1985	217	310	868	310	70.6	49.6	36.9	63.2	217	310	558	155	61.9	70.4	28.5	75.5
August	217	310	868	310	71.9	53.2	39.2	67.1	217	310	558	155	65.1	58.9	27.8	82.1
September	210	310	840	300	63.5	45.5	38.0	72.7	210	300	540	150	55.4	74.7	36.8	65.4
October	217	310	868	310	55.5	65.2	35.9	70.3	217	310	558	155	42.0	68.1	28.8	66.1
November	210	318	822	300	75.7	62.3	33.6	65.8	210	300	540	150	44.1	60.4	35.9	74.5
December	217	341	837	310	73.1	73.8	33.2	70.0	217	341	527	155	50.2	62.5	30.7	73.2
Half Yearly Total	1288	1889	5103	1840	68.4	58.3	36.1	68.2	1288	1671	3281	920	53.1	65.4	31.4	72.9
January 1986	217	341	837	310	58.3	65.9	35.8	73.8	217	341	527	155	48.6	43.3	34.8	76.8
February	196	308	756	280	67.8	63.1	30.7	68.5	196	308	476	140	52.4	55.1	32.4	60.0
March	217	341	837	310	62.9	50.8	28.1	44.4	217	341	527	155	65.3	55.6	39.3	82.2
April	210	360	780	300	69.0	61.4	34.8	58.9	210	353	510	150	69.0	62.0	41.2	91.2
May	217	372	806	310	67.8	53.0	25.1	54.6	217	372	496	155	68.8	60.7	42.4	87.2
June	210	360	780	300	67.0	52.1	36.2	52.8	210	360	480	150	58.9	62.4	37.7	78.4
Half Yearly Total	1267	2082	4796	1810	65.4	57.7	31.8	58.8	1267	2075	3016	905	60.5	56.5	38.0	79.3
Yearly Totals	2555	3971	9899	3650	66.9	58.0	33.9	63.5	2555	3946	6297	1825	56.8	61.2	34.7	76.1

DF/MTU = DFH2 locomotive with MTU diesel engine

Loco Days = Number of days during year multiplied by number of locomotives in service.

TABLE 7E

PERCENTAGE OF MAINLINE LOCOMOITVES AVAILABLE BY TYPE AND REGION

	TANZANIA REGION			ZAMBIA REGION		
PERIOD	DFH2	DFH2/MTU	DE U30C	DFH2	DFH2/MTU	DE U30C
Oct. 1986	34.1	60.5	64.7	N/A	N/A	N/A
Nov. 1986	35.3	62.8	59.3	N/A	N/A	N/A
Dec. 1986	31.1	69.1	51.3	67.2	83.2	88.0
Jan. 1987	33.2	56.0	61.0	61.4	76.3	84.9
Feb. 1987	29.7	60.2	59.8	56.3	75.0	87.9
Mar. 1987	37.8	60.9	63.8	N/A	N/A	N/A
Period Average	33.5	61.6	60.0	61.6	78.2	86.9

Source: TAZARA Regional Monthly Performance Reports.

TABLE 8E

LOCOMOTIVE RUNNING AND REPAIR PARAMETERS, FEBRUARY 1987

		DE KRUPP LOCOMOTIVE	DFH/MTU LOCOMOTIVE	DFH LOCOMOTIVE
1.	Locomotive Availability	87.9%	75.0%	56.3%
2.	LocomotiveUtility(Avail-Reserve)	87.9%	71.4%	52.5%
3.	Percentage of Reserving	0%	3.6%	3.8%
4.	Total Loco Running Kilometers	25255km	84493km	71147km
5.	Passenger loco Running kilometers	2835km	12004km	6096km
6.	Shunting loco kilometers	-	-	18480km
7.	Goods Loco Running kilometers Along the Line	22420km	72009km	46131km
8.	Actual running time of goods Main Loco	569hrs	1518hrs	1309hrs
9.	Total Ton-km of goods Traffic	1978.3Ton-km	6300.7Ton-km	3746.8Ton-km
10.	Loco Running Kilometers per day	258km	449km	417km
11.	Technical Speed	36.1 km/hr	44.4km/hr	30.6km/hr
12.	Average Gross Weight per train	964 Tons	936 Tons	937 Tons
13.	Daily Output of Locomotive	22.7 Ton-km/	39.3 Ton-km/	33.9 Ton-km/
14.	Total turnround time of goods	2115 hrs	3862 hrs	2658 hrs
15.	Kilometers Covered by light loco	890km	4684 km	6140 km
16.	Number of trips	10	14	17
17.	Percentage of Locomotive Repairs	12.1%	25.0%	43.7%
18.	Percentage of Locomotive Under periodical repairs	-	14.3%	29.2%
19.	Percentage of Locomotive Under Casual repairs	12.1%	10.7%	14.5%
20.	Number of Repairs	17.0	91.0	208.0
21.	Number of line failures	3	11	13

TABLE 9E

SUMMARY OF LOCOMOTIVE FAILURES FOR DEH CONVENTIONAL LOCOMOTIVE FOR THE YEAR 1985/86

MONTH	TOTAL KILOMETRAGE	DIESEL ENGINE	TRANSMISSION	ELECTRICAL	BRAKES	COOLING SYSTEM	BOGIES	COMPRESSOR & EXHAUSTER	WHEEL SLIPPING	OTHERS	TOTAL FAILURES	RATE FAILURE PER 10 KM
		DEH LOCOMOTIVE FAILURE COMPONENTS										
July	186,651	17	3	3	-	5	1	2	-	3	34	18
August	206,637	6	1	2	2	2	1	3	-	1	18	9
September	202,786	14	1	4	-	1	-	3	-	-	23	11
Quarterly Totals	596,074	37	5	9	2	8	2	8	-	4	75	12.6
October	215,698	20	3	4	-	2	-	1	-	2	32	14.9
November	211,247	17	5	6	-	2	-	-	-	2	32	15.2
December	146,272	20	7	4	3	1	-	3	-	-	38	26
Quarterly Totals	573,217	57	12	14	3	5	-	4	-	4	102	17.9
Half Year Totals	1,169,291	94	20	23	5	13	2	12	-	8	177	15
January	184,755	9	-	1	-	3	2	-	-	-	15	8
February	185,897	12	1	5	-	2	-	1	-	-	21	11.3
March	178,238	25	3	5	3	3	-	1	-	-	40	22.5
Quarterly Totals	548,890	46	4	11	3	8	2	2	-	-	76	13.8
April	176,285	10	1	3	2	-	1	-	-	1	20	11.4
May	142,582	8	1	3	-	3	-	-	-	3	18	12.9
June	174,676	13	-	3	-	4	-	2	-	-	22	12.6
Quarterly Totals	493,543	31	2	9	2	7	1	2	-	4	60	12.2
Half Year Totals	1,042,433	77	6	20	5	15	3	4	-	4	136	13
Yearly Totals DEH	2,211,724	171	26	43	10	28	5	16	-	12	313	14.2
Yearly Totals for DEH/MTU	1,507,966	51	29	33	1	14	4	19	2	8	141	9.4
Yearly Totals DE Krupp	861,487	5	-	9	4	5	1	-	48	11	83	9.6

TABLE 101:
WAGON FLEET

	76/77	77/78	78/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86
TOTAL NUMBER OF WAGONS IN FLEET	1997	1997	1997	1997	1997	1997	1964	1964	1964	1849
General User	1818	1818	1818	1818	1818	1818	1787	1787	1787	1689
Tankers	126	126	126	126	126	126	124	124	124	109
Others (Specialized)	53	53	53	53	53	53	53	53	53	51
Average wagons in operation daily on TAZARA	-	-	1150	1021	1290	1269	1139	907	825	779
ZAMBIA RAILWAYS	-	-	321	154	221	393	590	423	536	541
TOTAL	1032	1175	1471	1175	1491	1662	1729	1330	1361	1320
Average wagon turnround time on TAZARA	11.7	11.2	18.9	17.2	23.4	20.1	25.5	17.4	15.6	16.6
Average number of days TAZARA wagons held on Zambia RR	-	-	24	34.7	19.3	21.6	39.1	18.7	20.1	27.7
Average wagon load (Tons)	35.3	33.2	32.5	31.6	32.3	34.2	33.3	34.8	34.5	33.0

Wagon load refers to actual freight carried in each wagon and does not include dead weight of wagon.
Detention time refers to days spent by wagons on Zambia Railways instead of on TAZARA.

TABLE 11E

MAIN LINE LOCOMOTIVE CHANGE POINTS - 1992/93
(including the Freight System)

PARAMETER BETWEEN	DAR ES SALAAM (T)	MLIMBA (T)	MBEYA (T)	CHOZI (Z)	MPIKA (Z)	NEW KAPIRI (Z)
TYPE OF LOCOMOTIVE	DFH2/MTU	DE	DE	DE	DFH2/MTU	DFH2/MTU
Maximum Track speed/km/Hr Between Parameter Points	60/70	70/40	40/60	60/50	60/70	70
Actual Speed Km/Hr	40/33	33/40	40	40	40	40
Km. Distance	0	502	854	1043	1420	1860
Hours	0	13	24	29	39	50
No. and Type of Locomotives Required	18 DFH2	9 DE	9 DE	9 DE	18 DFH2	18 DFH2

TABLE 12E

ANNUAL MAINTENANCE AND REPAIR PRODUCTIVITY PLANS TAZARA 1986-7

Conventional DFH Locomotive and motor trolleys (Locomotive availability 40%)

DESCRIPTION	REGION CLASS	NUMBER OF LOCOMOTIVES TANZANIA REGION	ZAMBIA REGION	TOTAL	MAXIMUM ALLOWANCE DETENTION TIME IN DAYS
Intermediate Inspection	A	110	64	174	3
Light repair B	B	26	15	41	6
Light repair A	C	14	11	25	35
Medium repair	D	10	5	15	60
Heavy repair	E	2	2	4	90
Accident repair	G	2	1	3	
100 HP trolley repairs	T	4	4	8	

Repowered Locomotives (Locomotives availability 65%)

Engine Hours	Repair Class	Tanzania Region	Zambia Region	Total	Maximum allowance detention time in days
500	W /A	42	40	82	2
1000	W /B	21	20	41	5
2000	W /C	17	16	33	15
8000	W /DorC	2	2	4	60

Diesel Electric Locomotive (Locomotive Availability 65%)

Repair Definition	Repair Class	Tanzania Region	Zambia Region	Total	Maximum Allowance detention time in days
Monthly	G2	37	34	71	1
3-monthly	G3	10	8	18	1
6-monthly	G4	5	4	9	2
Annual	G5	0	0	0	4
2-yearly	G6	4	3	7	6
4-yearly	G7	3	2	5	8
Accident	G	1	1	2	

TRAINING AND STAFF DEVELOPMENT

I. Present Status of Staff Development in TAZARA:

Training for TAZARA which has been primarily on-the-job (o-j-t) was provided by the Chinese on a large scale at the beginning of operations in the 1970s. In 1976 over 2,000 Chinese were working on the railroad. Since then o-j-t has been provided on a smaller scale by the 150 man Chinese Railway Expert Team (CRET), and by Zambian and Tanzanian employees in supervisory positions. The CRET concentrates on trouble shooting. The amount of actual skill transference from the CRET to TAZARA employees varies a great deal according to the efforts made in this regard by individual CRET members, their ability to communicate in English or Swahili and the time available.

In addition, the Chinese established a training school in 1975 at Mpika, Zambia. Since the departure of the Chinese teachers in 1981, the school has been run by TAZARA's local (Zambian and Tanzanian) staff. The school has a permanent staff of 28 instructors and a total of 70 employees. It has boarding facilities for 240 and classroom capacity for 300 students. The school has conducted courses for approximately 1700 students since 1978 with the following departmental distribution:

Department	No of Students
Mechanical Engineering	686
Traffic and Transportation	544
Civil Engineering	214
Signalling and Telecommunications	206
Finance and Supplies	49
	1699

In addition, 536 students have been tested for the Trade Testing Department in the same period.

The 32 different courses taught vary in length from two weeks to three years, with most being of short duration. The school is under-utilized.

The school has so far provided training mainly for locomotive drivers and signalling and telecommunication technicians and artisans. Other categories of staff for whom training has been undertaken but for a limited proportion of personnel are teleprint operators, station foremen, traffic operators, train guards, train conductors, controllers, coach and wagon inspectors, shunters, paints men, locomotive technicians, permanent way artisans and permanent way technicians. Recently the school has begun or is planning courses for commercial

clerks, statistics clerks, number takers, officers in the Traffic Department and in mechanical draughting, production management and supervision skills.

A major weakness of the school is its lack of applied or "hands on" training. This is due both to a lack of adequate materials at the school and lack of using the Mpika workshop and related TAZARA facilities.

TAZARA attempts to have training at the school organized in collaboration with the various Head Office departments. Each department has a training committee or coordinator responsible for channeling requests and recommendations for courses. The training school sends course syllabi to the departments for comment. Some departments are stronger than others in carrying out these responsibilities.

To date, TAZARA has devoted a significant amount of financial resources for training. Between 1979 and 1984 slightly over TSH 32 million was spent on training. Forty-four percent of this amount was provided for overseas training (for upper level staff); 25% for courses at African institutions other than Mpika; 15% for seminars; and the remainder (approximately 16%) financed the school at Mpika.

In 1985/86 TAZARA financed 15 continuing trainees (9 local and 6 overseas) and 14 new trainees (7 local and 7 overseas) for a

budgeted amount of TSH 10.25 million. The 1986/87 approved budget is TSH 8,533,000 to cover 18 continuing trainees (12 local and 6 overseas) and 11 new trainees (4 local and 7 overseas). The major fields for continuing training are accountancy (usually one year certification) courses and engineering. In TAZARA's lexicon "continuing" training is any period over three months.

Some TAZARA employees are trained under Tanzanian and Zambian government scholarships. In June 1986, 28 Tanzanians and 14 Zambians held government scholarships.

Training outside TAZARA is considered and decided upon by the Training Selections Administrative Committee chaired by the Deputy Managing Director and consisting of heads of department in the head office. Departments have developed a general five year training plan. Requests for individual training are received. However, there is no organizational plan outlining which kind of education and courses should be preferred. The criteria for selection of individuals based on job performance as well as aptitude and other variables needs to be strengthened.

II. Training and Staff Development Needs

Three major studies have thoroughly identified TAZARA's needs, including those that are subject to improvement through staff

development and training. These studies are: (1) "Operational and Staffing Study" by Canadian Pacific Consulting Services, Ltd., 1984; (2) "TAZARA Manpower Development Plan and Training Facilities Project - Appraisal Report", NORAD, 1986; and (3) "Program of Training and Related Measures to Strengthen the Mechanical Engineering Department of TAZARA," KFW, 1986. These reports in total, comprise several thousand pages of detailed analysis and recommendations, which TAZARA management has generally accepted. TAZARA has developed a ten year plan which contains 22 projects that also addresses many of the problems and recommendations contained in these analyses.

In this section we will briefly describe the major manpower training needs described in these reports and indicate how they are being addressed.

The following section will describe those areas upon which AID will focus. In section VII the budget will be presented.

The accomplishments of TAZARA are impressive. It is an operating railroad of over 1800 kilometers; moving nearly a million tons of freight per year and thousands of passengers. Most importantly, it must be appreciated that TAZARA has nearly 7,000 employees, of which virtually all had no previous training. The amount of on-the-job training being done at TAZARA is immense. The fact that so many workers have been trained and are knowledgeable in operating the railroad is creditable. In less than ten years,

the number of expatriates has been reduced from over 2000 to less than 170.

While not diminishing these accomplishments, all the studies to date suggest that TAZARA's efficiency and worker productivity are significantly below standard. The Canadian Pacific Study states: "There is sufficient evidence demonstrated by the number of derailments and accidents, lack of effective accounting systems, and by the low productivity in the workshops to suggest that a considerable amount of corporate effort in the next few years must be dedicated to improving the skills of the overall workforce". (p.115).

Specific training needs vary with departments and job level. However, the most critical are the following:

1. More on-the-job training to reinforce and improve technical skills already acquired, develop analytical skills to identify and solve problems, and develop skills in maintenance and management.

2. Improvement of productivity and motivation, particularly in the lower scale work force - grade 1-9 - comprising nearly 90% of TAZARA's work force.

3. The development of specialized skill areas which are relatively new or planned (e.g., operations of quarry equipment, mechanical track maintenance equipment, solar

power equipment) or in which there are insufficient numbers (e.g., accountants, engineers and some upper level positions such as corporate planners, economists and computer specialists).

The individual projects in TAZARA's 10-year plan with identified hands-on training needs are being met by donors. For example, the Germans have provided o-j-t. for maintenance of its locomotives, the Austrians for permanent way sections, FINNIDA for occupational safety, the Germans for workshops, USAID for G.E. locomotive maintenance. There are still some important gaps in on-the-job training. TAZARA officials believe there needs to be even more emphasis on training for track maintenance and on-job-training for all of the on-line employees. Even in areas of donor assistance, not all employees in these areas will receive training.

Several studies have recommended the Mechanical Engineering Department develop its own training function rather than rely on the Mpika school. This change would increase the effectiveness of its workers by providing more practical hands on training. The recommendation has been accepted and seveal projects (e.g., ME:1, ME:2, ME:3 and ME:4) have provisions for this.

Serious problems have been identified in the finance and accounts sector, largely because of vacancies and staff shortages. The NORAD appraisal mission identified "a huge need for accountancy training at all levels". TAZARA is aware of this problem and it is partially being addressed in several ways. It is expected that the new salary and benefit plan adopted by TAZARA will stop the exodus of qualified accountants that has historically taken place. NORAD and FEC have expressed interest in providing training in this area, but specific proposals have not yet been developed.

TAZARA has accepted the recommendations to reorganize the Personnel Department. This Department has the responsibility for industrial relations, manpower development and training. In order to develop, maintain and secure continuous evaluation of training needs and manpower development a new Manpower and Training Department will be created. It will be staffed by existing staff from the Training School and from the Personnel Department. NORAD will assist in this endeavor through project GM:2.

While several proposed projects (e.g., CE:I, GE:II and GM:2) provide assistance to Mpika School, it is generally felt that more technical instruction should be done on the job site (i.e., workshops, line etc.) and Mpika be used more for activities that would be best fitted for classrooms and seminars (i.e., accountancy, sales, management seminars, telecommunications, etc.,). However, even in these activities much closer

collaboration between Mpika and the technical divisions is being sought. This will be part of NORAD's GM:2 project.

TAZARA will at some point, have to computerize. Currently, a rather archaic and inefficient computer is used for payroll. However, scheduling, inventory, records and maintenance are done without the use of computers. When the system is developed, training programs for management utilization, and maintenance of the system will also have to be developed. Currently, nothing is being done in this area.

III. Manpower Development Plan

Project GM:2 (Manpower Development Planning and Training Facilities), funded by NORAD has set up a Coordinating Unit for all donor activities and will develop a long term Manpower Development Plan based upon TAZARA's 10-year Development Plan. The development of this Plan is expected to take three years and will be in two phases.

The first phase (12-15 months) will include four aspects:

1. A strategy for manpower registration.

2. A strategy for manpower development including organizing a new Manpower and Training Department.

3. A Comprehensive Manpower Development Plan.

4. An implementation program.

The second phase (24 months) will result from the finding of the first phase. Some possible components might include:

1. Development of a Manpower Section within the Personnel Department.
2. Provision of Training Aids.
3. Training of Instructors and Supervisors.
4. Management Training.

It is anticipated that components of Phase 2 will be picked up by several donors. However, all manpower development activities will be coordinated by the Manpower Section and will conform to the Manpower Plan.

The training program of this project has been vetted with the TAZARA management and NORAD-led coordinating unit. It obviously pre-dates the Manpower Plan. However, it addresses already identified critical needs and will become part of the overall manpower program.

. The Project Training Plan

The Project Training Plan addresses priority needs that are not being addressed by other donors:

A. On-the-job operations and maintenance training for G.E. locomotives.

B. Mid- and upper-level management training aimed at improving

productivity and efficiency.

C. Study Tours for lower grade staff to increase their knowledge and skill base and increase motivation.

D. Higher level participant training in areas related to the Project technical assistance (i.e., corporate planning, accounting, management training, mechanical engineering, railroad management, economist/market analyst).

A. On-the-job Operations and Maintenance Training for G.E. Locomotives:

On-The-Job training will be provided by an engineer experienced in the operations and maintainance of G. E. locomotives. He will reside in Mbeya and work at the Mbeya workshop. However, he will travel to other sites along the railway line as needed. Working on a one-on-one basis he will transfer his skills to the foreman, artisans and workshop supervisors with whom he comes in contact. This individual is already working in Mbeya under a contract with the FRG. The Project will pick him up after his current contract expires, which is anticipated as month four of the Project.

B. Management Training:

This element of the project will assist in improving productivity and efficiency by developing and carrying out

management training programs that will improve various work related behaviors (e.g., communications, decision making, supervision, planning, discipline, morale, problem solving).

Training is based upon a participatory problem oriented and experiential model. Experiential adult education techniques are used in which the participants draw on their own experiences to analyze problems and work out solutions. Activities are used in which participants increase their management skills (i.e., communication, supervision, etc.). This type of training is based on the premise that training can lead to changes in attitudes and behaviors when teams of collegues receive the same training, punctuated by on-the-job follow-ups.

Discussions and team building takes place. Lectures are not given. The process is ongoing and also action oriented. Teams are created, problems identified and strategies for solution developed. Groups are brought back together periodically to assess progress and revise their plans and strategies. It is anticipated that a supportive climate will be developed in which communication vertically and horizontally, is improved. Managers themselves will identify constraints, develop solutions and determine those management strategies best suited to their own situation.

Training Cycle

There are approximately 180 mid to upper level managers in TAZARA (levels 11-21 on the TAZARA salary scale). These will be divided in five groups of 30-40 each. Each group will undertake 3 training sessions approximately 8-10 months apart over the life of the project. It is expected that the initial session will be three weeks and the two following sessions two weeks each.

This training strategy is based on that successfully used in several projects including the Tanzanian Training for Rural Development Project. Under that project 10 members of the Tanzanian Institute for Development Management, at Mzumbe, were trained as trainers. Several of these can be classified as excellent trainers. At least two of them are expected to be part of the management training team for this project. They will be teamed with two trainers from the Mpika School staff, the American long term training consultant and one short term railroad management specialist. The short term specialist will vary depending on the particular need and may come from the United States or the Transportation Division of the Eastern and Southern African Management Institute (ESAMI) in Arusha, Tanzania. As the training program continues, the American long term consultant and the IDM trainers will play less of a leading role and the Mpika trainers will be developed as the primary

trainers. By the end of the project there will be a core of management trainers trained in on-the-job experiential training techniques who will be able to continue the program.

Illustrative Plan:

Session I:

Phase 1 - Familiarization, needs identification and Planning-3 weeks. Two IDM trainers, two Mpika trainers and one outside management specialist for three weeks each.

Phase 2 - Workshop/seminar-3 weeks. 30-40 participants. The staff as outlined above. However the outside consultant will be used for only two of these weeks.

Phase 3 - Assessment and forward planning: 1 week - the IDM trainers and Mpika trainers.

Session II - Approximately eight months later

Phase 1 - Needs identification and planning 1-2 weeks: one or two IDM trainees (depending on strengths of Mpika Trainers). Mpika trainers for entire period.

Phase 2 - Workshop (seminar) 2 weeks: Same staff as Phase 1 above. 30-40 participants (same participants as in Session I).

Phase 3 - Assessment and Forward Planning - 1 week: Same staff as above.

Session III: Approximately eight months later

Phase 1 - Needs Identification and Planning - 1 week: Two Mpika trainers, one IDM trainer if needed.

Phase 2 - Workshop seminar - 2 weeks: Same staff as Phase 1 with addition of outside consultant.

Phase 3 - Assessment/Planning, 1 week: same staff as Phase 1.

Back home follow-up:

About midway between sessions teams of trainers will make visits to the job sites where possible, for short follow-up/feed back sessions with small groups of participants. This will involve 2 pairs of trainers (e.g., 2 IDM, 2 Mpika) for two weeks each for the initial follow up and 1 pair of trainers for two weeks on the second follow-up.

Venue, Facilities, Staffing:

The management workshops will take place at Mpika School and TAZARA headquarters at Dar es Salaam. There are adequate facilities at both locations. A small amount of training equipment and supplies (worth $75,000) will be ordered and used at both locations.

A full time management training consultant working with the TAZARA Chief Training Officer in Dar es Salaam, will be responsible for carrying out this program. A core of four trainers from the Mpika School will be used throughout the program. This will involve a total of 200 person weeks or five person years of Mpika staff time over a three year period. Obviously close coordination will be needed between the Personnel Department and Mpika School to insure staff and facility availability.

Executive Management Training:

A special cycle of management development seminars will be developed for the dozen most senior executives. They will follow a similiar format as those described above except for some important differences:

They will be shorter duration: 1 week. They will focus on a wider range of issues, such as policy dialogue and organizational development and also be designed to familiarize the senior management with the process oriented management development approach being utilized in the lower level management workshops.

They will utilize more outside expertise and venues away from TAZARA. The first being held in the U.S. and combined with a study tour.

C. Short-term Work Study Tours for Mechanical Engineering Staff: Technical training provided by the project to lower grade staff will be complemented by study tours for selected staff from grade 11 or below. The objective is two-fold: (a) provide a broader base experience from which they can view their own job through exposure to people in the same or similiar positions elsewhere thus increasing their knowledge and skill base and sense of commitment; (b) provide a reward based on job performance. Tours would consist of a one-week tour of Mpika and Mbeya workshop people to Dar es Salaam. They wil tour the operation in Dar es Salaam including port operations and Head Office as well as the workshop. In turn selected Dar workshop staff will be sent to visit the workshops at Mbeya, Mpika. Since the travel will be by rail they can experience or observe first- hand problems related to poor performance. Participants will be both Zambians and Tanzanians. The strategy will be to provide a set of 3-5 topics on which the tour teams are expected to gather information and impressions. They study teams will then report back at group meetings at their respective workshops. The selection of participants will be based on job performance and limited to artisans and others in the lower grades. Logistical arrangements will be the responsibility of the project training staff (management and technical consultant) assisted by department

supervisors. Since a more senior person from the workshops will act as tour leader, this person should serve as a translator, if necessary, so that good workers will not be ineligible because of their lack of ability in the language, e.g., Swahili or English.

The Project's long term technical consultant for the Mechanical Engineering staff, and Mpika trainers and senior workers will help develop the topics and programs. Occasionally, for purpose of monitoring and planning, the technical consultant, management trainer and an Mpika trainer will accompany the tour.

Study tours such as these are needed for lower grade workers in the other departments as well as mechanical engineering. It is expected that if these tours prove successful, they will, with the assistance of other donors, be expanded to other departments.

Illustrative Study Tour Program:

Phase 1 - Planning - 1/2 day: one resource person (trainer or technical consultant), 5-6 participants.

Study tour - Five to seven days, including travel time - 5-6 workers, periodically accompanied by resource person.

Follow-up discussions/seminars - 1/2 day for each of the working units represented by participants on the tour. Occasionally involving resource person.

D. Participant Training:

Long- and short-term participant trainng will be provided geared to the technical assistance provided by the project. Funds for six Masters' degrees will be provided in the areas of most immediate need: at least two accountants (for Senior Accountant positions), one corporate planner and one mechanical engineer (for Senior Planning Officer Position). Short term programs/study tours in the U.S. and LDCs will be provided for managers technicians and trainers in such areas as railroad management and operations, materials management, pricing and costing, transport statistics and information services, computer programming/utilization and training of trainers. Work study cousrses run by G. E. in various aspects of railroad maintainance and operations will also be utilized. When possible experts will be brought to TAZARA to conduct training.

Early in the project, five Mpika trainers will be sent to the U.S.D.A. Trainers of Trainers Course in order to provide some grounding in the experiential and process-oriented management training techniques that will be used.

The Personnel Officer, assisted by the management training consultant will develop a participant training plan by the end of month 12 of the project. This plan will be revised at the end of month 24 and 36. It will include the short- and long-term

training needed, geared to the project and in priority of need. The exception to this procedure will be the initial Mpika trainers selected for training of trainers workshops, as they must get this management training program scheduled to begin month 12. Also, the long-term participants in critical areas will be processed as soon as adequate candidates are selected.

The criteria for candidates selection will include the following:

Appropriateness of his/her function

Performance on-the-job

Ability to do academic work in English

For certain fields demonstrated ability to do math and science

Academic qualifications

The Training Plan and candidates nominated will be subject to AID concurrence. Training will be done in accordance to AID Handbook 10 regulations.

The USAID/Tanzania Mission which has an experienced Training Officer and an Assistant, will be responsible for processing PIO/Ps and participants, using the services of AID/Washington and assisted by the Project technical assistance team in defining the training programs and identifying training institutions.

V. The Management Training Technical Assistance:

The qualities of the management training technical assistance will be the key ingredient for the success of the training program and, in turn, the improvement of TAZARA's efficiency. To direct and carry out this program a small group of American management specialists should be utilized for short term consultancies. This approach will insure continuity and a minimal loss of time because of the need for familiarization. An initial consultancy of several months will be necessary to conduct a needs assesment, establish benchmarks, etc. These persons must be experienced in three types of management training activity: experiential education, organizational development, process-oriented management techniques. They must have successful experience working in these areas in Africa. They must be energetic, willing to get their hands dirty and be able to operate in the cultural milieu of TAZARA. While experience in railroads would be desirable, the skills and qualities described above are more essential. The organization and management problems of TAZARA are not very much different from other institutions in the region. They are subject to improvement by the management training model described above which will be modified to TAZARA's special circumstances.

Some of the initial gearing-up acitivities that will have to be done during the first six months of project acitivity include the following:

- Develop a global needs analysis for all three aspects of project training, i.e., o-j-t management participant training, study tours (month 1 thru 6);
- Develop detailed training schedule for all aspects of project training (7-9);
- Develop benchmarks for evaluation of training programs, including objective criteria (1-6);
- Develop formal coordination mechanism for training, planning and implementation that involves participation of all departments (1-6);
- Develop detailed Programs and schedule for all project training (ongoing);
- Initiate in-house training programs: management training (month 6-9), study tours (6-9);
- Initiate external training programs; participant training (3-6), study tours (6-9);

Illustrative Plan - Schedule

Project Month	
6	Arrival of short-term management consultant for 3-5 months
12	Training Needs Analysis developed Evaluation Criteria developed Formal Coordinating Mechanism developed Agreement reached with IDM for use of its Trainers. Detailed Training Programs & Schedules developed. Participant Training Program underway - at least two L.T. and two S.T. participants in training.
15	Study tour program for Mechanical Engineering program begins. In-service Management Training begins. Senior Executive Management Seminar completed. Remaining long-term participants selected Remaining Mpika trainers receive ToT training.
24	All in-service management training groups have received Session I training. 10 study tours completed

Training schedule revised for next year
Remaining long term participants begin trng.

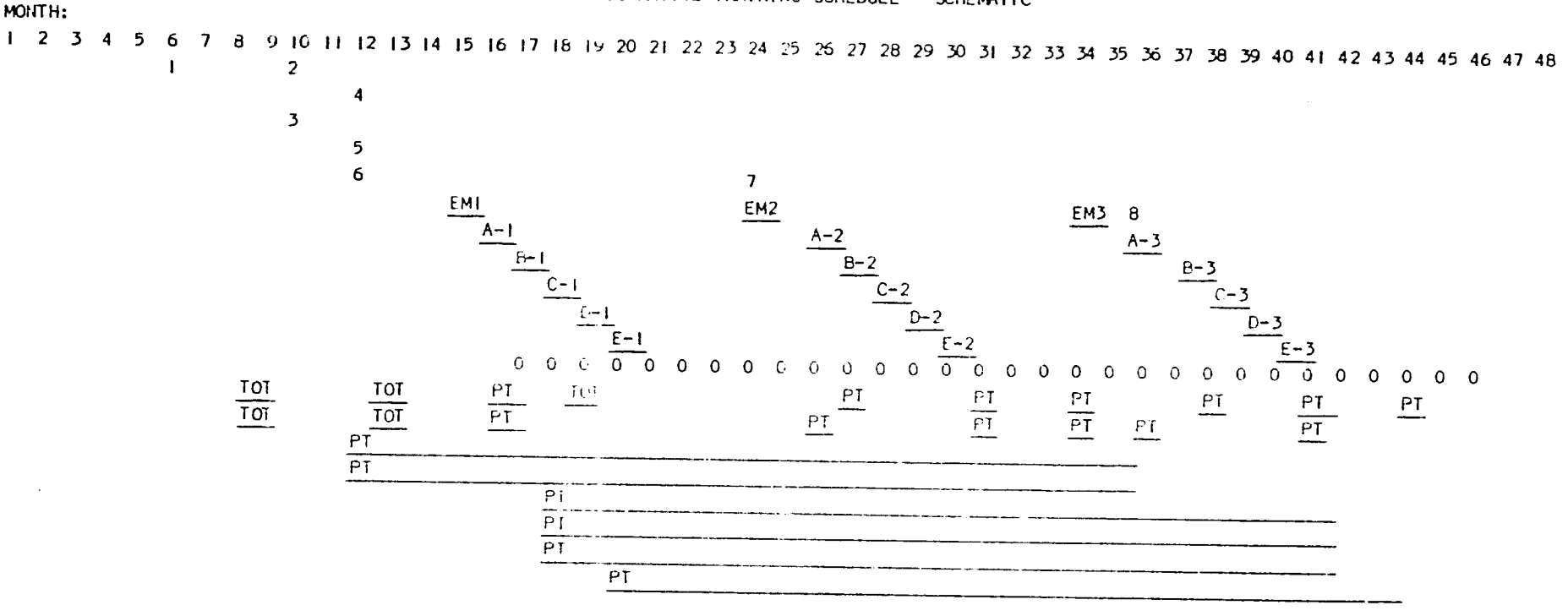
36 Two L.T. participants returned.
10 additional study tours completed.
Session II management training completed

48 Remaining L.T. participants returned.
Session III management training completed.
10 additional study tours completed.

VII. BUDGET FOR TRAINING COMPONENT

	U.S. $
S.T. Consultants - 15 p. m.	330,000
Executive Management - 3 workshops	70,000
In service management	250,000
Participant Training	460,000
Study Tours	18,000
Equipment/supplies	75,000
	$1,203,000

ILLUSTRATIVE TRAINING SCHEDULE - SCHEMATIC



KEY TO SCHEMATIC:

0	-	Study Tour
EM	-	Executive Management
A/E 1	-	In service Management Phase 1 - Group A-F
A/E 2	-	In service Management Phase 2 - Group A-E
A/E 3	-	In service Management Phase 2 - Group A-F
P.T.	-	Participant Training
TOT	-	Trainers of Training
1.	-	Arrival of Management Training Specialist
2.	-	Training Needs Analysis developed
3.	-	Coordination mechanism developed
4.	-	Benchmarks and objectives Criteria established
5.	-	Agreement with IDM
6,7,8	-	Detailed Training Program and Schedule for upcoming year developed.

ANNEX H

BUDGET COSTING

Notes on Costing/Budgets

1. Locomotives and Spare Parts:

   Price of locomotives are calculated at $1.5 million each

   Cost of 14 at $1.5 million = $21.0 million

   20% equivalent of capital cost for spare parts is $4.2 million

2. Tools, Equipment and Spare parts to overhaul 11 and repair 2 GE/Krupp diesel electric locomotives

   Costs are from sample current G.E. and other suppliers catalogues.

3. Long Term Technical Assistants per annum:

   Assumes a family of four, two of whom are school age children, one will be on site for three years, and other away at school is estimated at $256,300 per year.

4. Short-term:

   a. Final IQC - $15,000 per person month;

   b. Rail Management Contractor - $22,000 per person month.

5. Local Salary Schedule:

   Local Personnel salaries are consistent with the TAZARA and GOT salary scale including all other benefits.

6. Trainers from IDM, ESMAI:

Short term training

Regional Consultants

Salary ($100/day)

Per diem ($73/day)

Transport ($100/round trip)

Costs per assignment to Tanzania are calculated as follows:

A. Long Term T.A.

Cost	Year 1	Year 2	Year 3	Total
Recurring Costs				
Salary	60000	60000	60000	
Differential	15000	15000	15000	
Housing-rent	24000	24000	24000	
Housing-utilities	6000	6000	6000	
Housing-Guard	1800	1800	1800	
Education, 1 at post				
1 away	20000	20000	20000	
HHE Storage	2500	2500	2500	
Insurance	1600	1600	1600	
Miscellaneous	2500	2500	2500	
sub -total	133400	133400	133400	400200
Operational Costs				
Tickets	2000	2000	2000	
Per Diem, 60 days per year	4500	4500	4500	
Supplies	2000	2000	2000	
Sub-total	8500	8500	8500	25500
Non-recurring Costs				
Assignment Travel	6000		6000	
HHE Shipment	10000		10000	
Air freight, 700lbs	4000		4000	
POV Shipment	2500			
Medical Evaluation	600			
Travel to R&R post	6000	6000		
Settling-in	750			
Temporary lodging	4000		4000	
Furniture, appliances & Fr.	36000			
Sub-total	69850	6000	24000	99850
Overhead (135% on wages)	81000	81000	81000	
TOTAL	292750	228900	246900	768550
Average cost per year				256183

Rounded to $256,300 per year

B. Short Term Consultancies per month:

(1) Actual fees paid for financial IQC consultants in Tanzania:

Salary	6,760
Per diem ($73 per day)	2,190
Transport roundtrip from USA	2,500
In-country travel	100
Car rental	400
Overhead 60%	2,700
	12,390
ROUNDED TO	$ 15,000

(2) Representative cost per month for railway engineering consultants in Tanzania, Louis Berger International Inc.

Cost Element	
Salary	6,760
DBA Insurance	168
Per Diem $73 per day	2,190
Transport to/from U.S.	2,500
In-country travel	275
Car-rental	400
Misc. (visas, innoculations, medical, etc)	250
Sub-total	12,543
Overhead	9,126
Average Cost per month	21,669
Rounded to	22,000

ANNEX J

FINANCIAL ANALYSIS AND CURRENT DEBT OBLIGATIONS

1. TAZARA's Financial Position

TAZARA's total performance during FY 85/86 and first quarter of FY 86/87 was satisfactory; 330,246 tons of freight traffic were loaded against a target project of 296,597 tons. Similarly, the 334,109 passengers conveyed exceeded the budget figure by 1109 passengers. Performance was 27% better when compared with same quarter 1985/86 financial year.

During the quarter in question, a net surplus of TSH 139,543 million was registered against a budgeted loss of TSH 27.34 million. The favorable financial results were basically due to higher tonnage conveyed during the quarter as well as the tariff review.

2. Debt Repayment

TAZARA has incurred debt not only in connection with the original plan and rolling stock, but also for parts and materials used in the first four years and the current three years of operation. Repayment of the debt incurred for early materials will not be completed until June 1991, more than ten years after they were used. Materials under the current loan will not be paid for completely until 1993, or 7 years after they have been used up. For purposes of depreciation, locomotives have been assumed to have an effective life of 15

years. Those acquired under the 1980 loan will be paid for by June 1994, or at the end of their planned life, while those acquired as part of the original loan will not even begin to be paid until after their expected life.

Other loans such as RMBY 427,850 for the Chinese technical assistance RMBY 10 million for supply of spare parts and RMBY 2.7 million for repair material on Chambeshi Bridge have also been rescheduled.

In the course of the tripartite talks between the Government of China, the Government of Tanzania and the Government of Zambia in 1983, new schedules were established for the repayment of three outstanding loans and one new one. By agreement, no interest has accrued from that date forth. These loans are the following;

a. Commencement of repayment of the original loan of RMB 988 million Yuan has been rescheduled from January 1, 1983 to January 1, 1988. The final of 30 equal payments will be due in 2022.

b. The loan for parts and materials from startup through 1980 for a total of RMB 91.9 million Yuan has been rescheduled to commence in October 1987 and be paid out in equal payment over five years.

c. The loan of RMB 11.2 million Yuan signed in 1980 for 12 additional locomotives has been rescheduled to commence on September 1, 1987 and is to be repaid in 10 equal installments.

d. A new loan of RMB 30 million Yuan has been signed to cover parts and materials for the three years commencing October 1983. It is to be repaid in five equal annual installments commencing October 1, 1989.
The total of these RMB 1,121,1 million Yuan.

All loans are recoverable in equal shares from the Government of Tanzania and Government of Zambia. If these loans are passed directly through to TAZARA, which then retains liabililty for their repayment, and all of the new loan is used, a debt repayment schedule can be drawn for the fiscal years 1986/87 through 2021/22. Table J-1 shows the details of the repayment of the four loans in RMB Yuan.

3. German Loans for Krupp Locomotives

In 1984, FRG provided TAZARA with 14 Krupp locomotives valued at DM 50 million, in loans. DM 30 million was converted to a grant to the Tanzanian and Zambian Governments in equal proportions and later the DM 20 million as a grant to the Government of Tanzania. The locomotives were passed to TAZARA by the two governments as equity.

TABLE J-1

PAYMENTS REQUIRED FOR EACH OF THE FOUR CHINESE LOANS
(Million of RMB Yuan)

YEAR	ORIGINAL LOAN	PARTS AND MATERIALS LOANS	LOCOMOTIVES LOANS	NEW PARTS AND MATERIALS LOANS	TOTAL
1986/87		18.384			18.384
1987/88		18.384	1.12		19.504
1988/89		18.384	1.12		19.504
1989/90		18.384	1.12	6.000	25.504
1990/91		18.384	1.12	6.000	25.504
1991/92			1.12	6.000	7.120
1992/93	32.93		1.12	6.000	40.050
1993/94	32.93		1.12	6.000	40.050
1994/95	32.93		1.12		34.050
1995/96	32.93		1.12		34.050
1996/97	32.93		1.12		34.050
1997/98	32.93				32.930
1998/99	32.93				

NOTE:

23 more payments on the original loan of RMB 32.93 million Yuan will be required, ending 2022.

TABLE J-2 indicates the operating expenditures
FY 1985/86 Versus 1986/87

FINANCIAL RESULT

OPERATING EXPENDITURE (TSH '000')

DEPARTMENT	IST QTR 1985/86	IST QUARTER 1986/87 BUDGET	ACTUAL	ABS	VARIANCE %
HEAD OFFICE					
- Administration	1.443	4.761	5.384	(0.623)	13.1
- Personnel	0.837	2.174	1.008	1.166	53.6
- Traffic	0.615	1.233	0.540	0.693	56.2
- Civil Engineering	0.451	1.586	0.440	1.146	72.2
- Mechanical Engin.	0.407	2.731	0.899	1.832	67.1
- Accounts & Finance	1.014	7.796	0.818	6.978	89.5
- Supplies	0.260	0.650	0.462	0.188	28.9
- Corporate Planning	0.317	0.670	0.614	0.056	8.35
- Internal Audit	-	0.699	0.179	0.520	74.4
- Cret	3.084	5.459	8.581	(3.122)	(312.2)
- Training - General	1.015	2.087	0.877	1.21	57.9
- Training - School	1.396	1.766	1.554	0.212	12.0
	10.839	31.612	21.356	-10.26	(32.4)
TANZANIA REGION					
- Administration	-	0.511	1.017	(0.506)	99.02
- Personnel	-	11.901	2.437	(0.536)	28.19
- Traffic	-	11.508	12.934	(1.426)	12.39
- Civil Engineering	-	18.176	19.600	(1.424)	7.83
- Mechanical Engin.	-	45.954	50.164	(4.21)	9.16
- Accounts & Finance	-	1.338	1.732	(0.394)	29.4
- Supplies	-	0.744	11.042	(0.298)	40.5
TOTAL	64.027	80.132	88.928	(8.796)	10.9
ZAMBIA REGION					
- Administration	-	1.467	0.937	0.530	36.13
- Personnel	-	1.957	1.468	0.489	24.98
- Traffic	-	7.2030	7.769	0.539	7.48
- Civil Engineering	-	10.269	13.583	(3.314)	32.3
- Mechanical Engin.	-	43.348	34.672	8.676	20.0
- Accounts & Finance	-	1.257	1.014	0.243	19.3
- Supplies	-	0.722	0.694	0.073	10.1
TOTAL	49.080	66.273	60.136	6.137	9.26

Source: TAZARA

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4. MTU Engines:

TAZARA obtained suppliers letters of credit for the MTU diesel locomotives for the retrofitting exercises. Although they defaulted and accrued interest at 6.5% on the unpaid balance, TAZARA authorties assured PP team that there was debt outstanding.

5. Traffic Forecast:

Forecast of goods and passengers through TAZARA - (imports and exports) have been prepared by TAZARA for the period 1985/86 to 1995/96. The forecast provides a basis for determining an appropriation size for the number of locomotives over the next 10 years planning period and for establishing line operational and equipment requirements. For the TAZARA 10-Year Plan, the different goods categories projects are those which traditionally have passed through TAZARA plus additional possible diversion from South Africa, Malawi, Zaire, Zambia and Zimbabwe. These consist of copper, petroleum products and general cargo. A summary of the forecast is shown in Table J-3 in thousand of metric tons.

TABLE J-3

SUMMARY OF TRAFFIC PROJECTIONS

(a) GOODS TRAFFIC

	ACTUAL 1985/86	1986/87	1987/88	1988/89	/1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
ZAMBIA EXPORTS	440,000	410,664	408,971	409,428	410,938	412,229	413,768	415,633	417,886	420,615	424,122
ZAMBIA IMPORTS	183,000	270,978	281,355	291,090	301,307	311,898	322,204	334,204	345,899	358,060	370,630
SUB TOTAL	623,000	681,642	690,326	700,518	712,245	724,127	736,632	749,837	763,785	778,675	794,752
MALAWI EXPORTS	5,649	78,708	87,416	101,124	114,832	128,540	130,902	133,264	135,626	137,988	140,350
MALAWI IMPORTS	1,213	56,374	82,748	109,122	135,496	161,870	165,180	168,490	171,800	175,110	178,420
SUB TOTAL	6,862	135,082	160,164	210,246	250,328	290,410	296,082	301,754	307,426	313,098	318,770
TOTAL	629,862	816,724	860,490	910,764	962,573	1,014,537	1,032,714	1,051,591	1,071,591	1,071,211	1,113,522

(b) LOCAL TRAFFIC

	ACTUAL 1985/86	1986/87	1987/88	1988/89	/1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
TANZANIA REGION	302,000	445,000	510,000	590,000	655,000	730,000	800,000	870,000	940,000	1,010,000	1,080,000
ZAMBIA REGION	61,000	100,000	130,000	140,000	150,000	170,000	180,000	200,000	220,000	245,000	250,000
TOTAL	363,000	545,000	640,000	730,000	805,000	900,000	980,000	1,070,000	1,160,000	1,255,000	1,330,000

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TABLE J-3 (continued)

(c) TOTAL TRAFFIC

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
LOCAL TRAFFIC	545,000	640,000	730,000	805,000	900,000	980,000	1,070,000	1,160,000	1,255,000	1,330,000
EXPORT/IMPORTS	816,724	860,490	910,764	962,573	1,014,537	1,032,714	1,051,591	1,071,211	1,091,773	1,113,522
GRAND TOTAL	1,361,724	1,500,490	1,640,764	1,767,573	1,914,537	2,012,714	2,121,591	2,231,211	2,346,773	2,443,522

(c) PASSENGER TRAFFIC PROJECTIONS (000)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
TANZANIA REGION	793	870	940	1,015	1,097	1,184	1,279	1,381	1,492	1,611
ZAMBIA REGION	507	534	576	622	672	726	784	847	914	988
TOTAL	1,300	1,404	1,516	1,637	1,769	1,910	2,063	2,228	2,406	2,599

(e) WORKLOAD (000)

	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96
TONNE-KM	1,773,384	1,849,538	1,973,538	2,079,422	2,199,219	2,281.829	2,371,381	2,422,148	2,472,916	2,644,254
PASSENGER-KM	309,400	334,152	360,884	387,226	420,935	454,609	490,978	530,257	572,677	618,492
TOTAL WORK LOAD	2,082,384	2,183,690	2,334,422	2,466,648	2,620,154	2,736,438	2,862,359	2,952,405	3,045,593	3,262,746

Effects of the Dual Currency Tariff Schedule:

The accounting system divides the tariff in Shillings by 11:2 to obtain the tariff in Kwachas. After collecting the amount due in Kwachas, the cash is converted the Tanzania shillings at the prevailing rate which is substantially below the 11:2 rate used in the tariff schedule.

For example, if a customer ships class 8 goods 1,500 kilometers, the tariff is 206.30 shillings or 22.87 Kwachas per 100 kg. If 10,000 kg were shipped, the amount invoiced would be K2287 but the amount recorded in the books both receivable and revenue would be 20,630 Shillings. The customer remits K2287 which is then transfered to Tanzania Shillings (assuming this can be done without undue difficulty). Since the current (April 1987) exchange rate is approximately 6.87 the amount actually received would be TS 15,711.69. This represents a loss of TS 4918.31, which is 24%of the amount originally invoiced entirely due to foreign exchange.

This can be summarized in the following table:

	Shillings	Kwachas
Amount invoiced	20,630	2287
Amount Collected	15,711.69	2287
Lost Revenue	4,918.31	-

This illustration demonstrates a policy problem for TAZARA, i.e., is a dual currency tariff schedule appropriate when one currency is floating and the other fixed.

In addition, TAZARA's revenue policy which was adopted in 1979, states that "revenue is brought into account in the region in which it is collected". This means that all shipment of goods between Tanzania and Zambia, whichever direction, are considered as revenue for Zambia since the customer is located in Zambia and is billed in Kwacha from Zambia region. This policy creates difficulties for TAZARA because:

a. Given the current tariff structure and the current foreign exchange rates between Kwacha and shillings, large foreign exchange losses can occur;
b. Because of the difficulties in transfering funds between Zambia and Tanzania, the effect is to make more funds inaccessible to the region that has the greater requirement for funds;
c. It distorts the revenue and traffic volumes actually generated by each region; and
d. Defeats the basic internal control concept of recording transactions as close to the time and point of origin as possible.

ANNEX J1

Sent to the board

TANZANIA ZAMBIA RAILWAY AUTHORITY

BOARD OF DIRECTORS

MEMORANDUM NO. BD 42/85

10th September, 1985

TAZARA LOAN OBLIGATIONS TO THE T/O GOVERNMENTS AS PER CLAUSE NO. 8 OF TAZARA ACT

RECOMMENDATION

It is recommended to the Board of Directors to CONSIDER to recommend to the Council of Ministers as follows:

(a) Approve the amounts of the following loans be converted into equity and loan in the ratio of 60:40; be fixed in local currency in the sum stated and the repayment terms on the loan portion be as proposed below:

i. The loan of RMB¥ 20,427,850 worth of spare parts be fixed at TShs. 110,923,226 or ZK 10,005,342. The loan portion to be repaid in 10 years commencing in the year 2000.

ii. The loan of RMB¥ 2,745,558.86 worth of spare parts for Chambeshi bridge be equivalent to TShs. 14,908,385 or ZK 1,344,745. The loan portion to be repaid in 10 years commencing in the year 2000.

iii. The loan of RMB¥ 10,052,005.39 worth of spare parts be equivalent to TShs. 54,582,389 or ZK 4,923,355. The loan portion to be repaid in 10 years commencing in the year 2000.

iv. The loan of RMB¥ 30 million worth of materials and spare parts be stated in TShs. and ZK after all the spares have been disbursed to TAZARA. However the repayment period for the loan portion will be proposed later.

v. The loan of RMB¥ 11,160,000 for the 12 mainline locomotives be equivalent to TShs. 60,598,800 or ZK 5,466,048. The loan portion be repaid in 10 years commencing in September, 1987.

...2/.

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1. [illegible], a jointly owned undertaking by the Governments of the United Republic of Tanzania and the Republic of Zambia, is managed and operated as a single enterprise, its capital base is founded on the principle of equal contribution by the partner states. There has also been an attempt to achieve parity in taxation of TAZARA facilities so that no one state receives more revenues from the joint venture than the other.

2. However, due to the previous revenue collection policy which permitted, and due to expediency still permits, customers in Tanzania and Zambia to settle their TAZARA freight charges in either the shilling or the Kwacha consequent upon the predominance of Zambian cargo on TAZARA, approximately 80% of TAZARA revenue has over the years been collected and banked in Zambia. TAZARA's Tanzania Region on the other hand, with an average expenditure requirement of 60% of the total for the whole system, has continued to experience liquidity problems due to the absence of sufficient cash to transfer TAZARA funds from Zambia to Tanzania.

This invoicing and collection system was reviewed and changed by the Council of Ministers in January 1983 so as to allow freight charges to be billed and collected in the currency of the region where related services are rendered, but the change has not been effected due to foreign exchange difficulties. Its implementation would improve TAZARA's liquidity position in Tanzania region and present the prospects for establishing a corresponding loan redemption fund in Tanzania and consequently allow the sharing of the respective foreign exchange disbursements in future years.

3. In order to have some appreciation of the foreign exchange implications arising from the said loan commitments a schedule of the loans which have been passed on to TAZARA by the Governments of Tanzania and Zambia and the resultant foreign exchange outflows for ten years commencing 1984 are given in tables A and B respectively herebelow:

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	DESCRIPTION	AMOUNT	YEAR OF	REPAY.
1.	Railway Construction	988.00	1993	30
2.	[illegible] - Spares	91.92	1993	5
3.	Spares (Chambeshi Bridge)	3.7[illegible]	1993	5
4.	Spares	20.43	1993	5
5.	12 locomotives	11.1[illegible]	1987	10
6.	Spares	10.01	1988	5
7.	Spares	30.00	1989	5
		1,154.27		

NOTE: Loans from the Federal Republic of Germany for DM 30 million and DM 20 million for purchase 9 and 5 locomotives respectively have been excluded as they are assumed to have been passed on to TAZARA as equity contribution by the Governments of Tanzania and Zambia.

(in millions of RMB Yuan)

[illegible]	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
1								13.17	13.17	13.17
[illegible]	[illegible]	18.38	18.38	18.38	18.38					
[illegible]	[illegible]	0.20	0.22	0.22	0.22					
[illegible]	1.[illegible]	1.63	1.63	1.64	1.[illegible]4					
		0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45
			0.80	0.80	0.80	0.80	0.80			
				2.40	2.40	2.40	2.40	2.40		
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	41.36	43.2[illegible]	47.72	47.72	7.30	7.30	32.94	27.24	27.24
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Exchange Rates:

1 US Dollar = 5.[illegible]

1 RMB Yuan = 2.[illegible]

17 = TAS 7 066 702.14/.

NOTE: 1. The serial numbers on this table correspond to the ones on table A.

2. Except loan no. 2 for which TAIDA bears full obligation to GOVERNMENT of China, only 49% of each loan has been shown in the above table. These represent amounts recoverable from TAIDA by the two Governments in accordance with the agreed capital structure.

12/10/59

ECONOMIC ANALYSIS

Introduction

Recognizing the urgent need to improve its operational capability, TAZARA drew up an investment program in the form of a 10-year Development Plan to begin in 1985. The total investment package costing about US$ 356.5 (1984 prices) includes a total of 22 projects, of which 7 are permanent way and construction projects; 6 are signal and telecommunications projects; 7 are motive power, rolling stock and mechanical equipment projects, and the last 2 are general management and training projects.

The AID component of the total investment package involves expenditure of approximately US$46.087 million and a contribution by TAZARA of US$3.728 million. The project aims at increasing motive power of TAZARA through purchase of 17 new GE diesel locomotives, spare parts for new and existing locomotives, workshop construction and related tools and equipment, training as well as long and short term technical assistance.

TAZARA corridor is vital to the economies of both Zambia and Tanzania, and there is urgent need both to accommodate expanding traffic on this route and to reduce dependency of Tanzania, Zambia and other landlocked countries of Southern Africa on the South African transportation system.

Currently, in 1987, TAZARA is operating with flows averaging 1.2 million tons both ways per annum (up from 0.9 million tons in 1985/86), but well under theoretical capacity (about 2.5 million tons per annum each way) because of operational constraints and efficiency problems, among which are declining availability and inadequacy of motive power of the original Chinese locomotive fleet, and shortage of skilled and experienced staff.

The favourable conclusions arising from the economic analysis stem from the positive long-term impact on the combined national incomes of the two countries and of TAZARA itself, if efforts are put to increase TAZARA's operational capability. Ancillary benefits, which have not been quantified, will stem from the significant regional impact TAZARA will have in ensuring optimal utilization of the regional tranportation system.

2. Macro-economic Overview

The economic performances of Zambia and Tanzania, which make up ownership of TAZARA, provide the appropriate framework for analyzing TAZARA's role in the regional transportation system.

A. Zambia:

Zambia's economic performance over the past decade has been very slack, as evidenced by the performance of the economy, which fluctuated between positive and negative growth rates during the period 1971 - 1985, as follows:

1971-1975	-	2.5%
1975-1979	-	-2.2%
1980-1983	-	2.0%
1984	-	0.7%
1985	-	3.4%

Correspondingly, Zambia's foreign trade showed an inconsistent trend mainly because of the worldwide economic recession, which reduced the demand for industrial raw materials. This situation was aggravated by reduced production of copper, which accounts for about 90% of Zambia's foreign exchange earnings (from 584,200 tons in 1982 to 479,000 tons in 1985). Recently, however, there have been improvements of copper prices on the international market and there already has been a push forward in the copper industry.

Agriculture production experienced a decline which also affected the southern Africa region, because of a 3-year severe drought up to 1984. Improved rainfall over the past two years has helped the agricultural sector to hold its own against the economic recession. The manufacturing sector

depends mainly on imported inputs and consequently has been severely affected by shortage of foreign exchange. Though, in 1985 output grew by 9% compared to only 1% in 1984, this sector continues to perform at below optimum levels, a situation which is continuously aggravated by the continuing foreign exchange crisis.

B. Tanzania:

What makes Tanzania's economy distinct from Zambia's economy is its almost total reliance on agriculture, which contributes an average of 40% of the GDP in the economy. Yet for the period between 1966 and 1973, this sector grew by only 2.3% per annum, which was not in keeping with the population growth rate (about 3.4% per annum). In addition, as the balance of payments deficit further widened and foreign exchange became more scarce from the period after 1970, the country began to be more reliant on external financing. The economic decline trend was also accelerated by some external factors, including 1979 petroleum prices increase, break up of East African Community, the 1978/79 involvement in the Uganda war and worldwide recession. All these negative factors, helped by inflation, had their inevitable effects, mainly decline of GDP (in 1983 it was virtually at the 1979 level) and a significant decline of imports and exports.

The decline in the economy is illustrated by the figures of Tanzania imports and exports through the port of Dar es Salaam. In 1978, the port handled 0.9 million tons of Tanzania imports and exports while the corresponding figure for 1983 was 0.6 million tons. However, the Southern region of the country where TAZARA traverses has recorded a positive growth in agricultural production over the past ten years.

Building of TAZARA has opened up large areas of the country, making it possible that Tanzania may yet realize its potential in moving its domestic goods. Currently Tanzanian policy is directed toward improving use of TAZARA for the agricultural areas along this railway line. Dar es Salaam, which is the country's main port, is supplemented by the other two smaller ports, Mtwara and Tanga, which are at the moment catering mainly to local traffic.

3 TAZARA

(a)Significance of the Corridor:

In normal times, Zambia's foreign trade is handled by the ports in Tanzania (Dar es Salaam), Mozambique (Nacala, Beira and Maputo), South Africa (East London) and Angola (Lobito). In the 1960s all Zambia copper went through Zimbabwe via Beira until the border closure with Zimbabwe in 1973. In addition, internal strife in Angola led to the closure of the Lobito (Benguela) route in 1975. As an emergency measure, Zambia resorted to airlifting of her copper, other metals and

petroleum products, which eventually led to the construction of:

i. the Tanzania Zambia Highway (TANZAM) built during the years 1970 to 1974, which also provides a link to the Kenyan Port of Mombasa;

ii. the Tanzania Zambia Railway line (TAZARA) built during the years 1970 to 1975, with Zambia and Tanzania each having a 50% ownership; and

iii. the Tanzania Zambia Oil Pipeline (TAZAMA) completed in 1968, between Dar es Salaam and Ndola. (The pipeline has diverted oil from the access corridors, including TAZARA, and in part explains the decrease of traffic flows on TAZARA immediatley after its completion. Between 1980 and 1984, it transported an average of 0.6 million tons of oil per annum).

Table K1 below shows that TAZARA is not in every instance the shortest route to the sea. However, in no instance is a South African port the shortest. Both political, economic and security aspects have provided the rationale for Zambia's corridor usage options, e.g., Zambia's recent decision to divert copper exports to Dar es Salaam from South African routes.

As a matter of agreed understanding between Zambia and Tanzania and because of its 50% share of TAZARA ownership, Zambian cargo will always receive high priority on the line. In the event of closure of the RSA border to SADCC countries the Tanzanian Government is committed to diverting all its local traffic to the local ports of Mtwara and Tanga, in order to leave the Dar es Salaam route for regional use by SATCC countries.

Table K2 compares user charges of various routes for some Zambian major commodities. Although data is based on 1982 price levels and does not reflect changes in tariffs and exchange rates which have occurred since then, the table generally reflects a reasonabe comparative picture. The recent devaluation of the Zambian Kwacha and the Tanzanian Shilling have had the effect of making the TAZARA tariffs much more competitive with other tariffs in the region. It is particularly advantageous for Zambia to use TAZARA in view of the foreign exchange saved. Zambia pays TAZARA in Zambian kwacha, Tanzania in Tanzanian shillings, while other countries using TAZARA pay in hard currency.

TABLE K-1 - DISTANCES TO PORTS

ORIGIN	DESTINATION	DISTANCE (km)
Lusaka	Dar es Salaam (rail)	2,045
	Dar es Salaam (road)	2,008
	Nacala (by road to Mchinji and then by rail	1,811
	Maputo (rail	2,035
	Beira (rail via NRZ)	2,026
	Beira (by road to Lion's Den, then by rail)	1,119
	Durban (by rail via Botswana)	2,812
	Lobito (by rail)	2,679
Kitwe	Dar es Salaam (rail)	2,050
	Dar es Salaam (road)	1,955
	Nacala (by road to Mchinji and then by road)	2,170
	Maputo (rail)	2,409
	Beira (rail via NRZ)	2,400
	Beira (by road to Lion's Den then by rail)	1,478
	Durban (by rail via Botswana)	3,186
	Lobito (by rail	2,437

TABLE K2 - USER CHARGES PER TON TO OR FROM PORTS
(Zambia Kwacha at 1982 prices)
Lowest Cost Alternative Indicated by*

	Dar es Salaam		Nacala	Maputo	Beira		Durban
	Rail	Road	Rail+Road	Rail	Road	Rail/ Road	Rail
Exports							
Copper (Kitwe)	75*	30	210	130	130	125	145
Lead (Kabwe)	60*	115	125	90	105	90	130
Mixed General Cargo:							
Container 15t (Lusaka)	205	270	275	185	185	180*	310
General Cargo (Lusaka)	195*	290	325	240	240	210	310
Imports							
Wheat (Lusaka)	105	145	160	85	90	70*	120
Fertilizer (Kafue)	105	160	155	90	90	70*	125
Machinery (Kitwe)	340*	405	510	410	420	395	520
Mixed General Cargo:							
Container: 15t (Lusaka)	380	480	450	365	360*	440	485

Source: SATCC, Technical Unit, July 1983

(b) Demand Forecast

The traffic component for purposes of analysis of economic return for TAZARA is made up as follows:

- Zambia, imports and exports
- Zambia local traffic
- Tanzania imports and exports
- Tanzania local traffic
- Malawi imports and exports

Table K3 below contains TAZARA's revised traffic projections for the ten year development period building up to about 2.4 million tons by the year 1995/96.

TABLE K3 - TAZARA DEMAND FORECAST (1985-1995)

	Imports/Exports		Local Traffic		Total
	Zambia (tons)	Malawi (tons)	Zambia (tons)	Tanzania (tons)	Traffic (tons)
1985/86*	623,000	6,862	61,000	302,000	992,862
1986/87	681,642	135,082	100,000	445,000	1,361,724
1987/88	690,326	170,164	130,000	510,000	1,500,490
1988/89	700,518	210,246	140,000	590,000	1,640,764
1989/90	712,245	250,328	150,000	655,000	1,767,573
1990/91	724,127	290,410	170,000	730,000	1,914,537
1991/92	736,632	296,082	180,000	800,000	2,012,714
1992/93	749,837	301,754	200,000	870,000	2,121,591
1993/94	763,785	307,426	220,000	940,000	2,231,211
1994/95	778,675	313,098	245,000	1,010,000	2,346,773
1995/96	794,752	318,770	250,000	1,080,000	2,443,522

* Actual traffic

Source: TAZARA Corporate Planning Department

TAZARA's demand forecast is based on the following assumptions:-

- Traffic (both imports and exports) from Botswana and Zimbabwe, currently passing through South Africa, would be diverted to TAZARA in the event of routes through South Africa being closed. The tonnages are estimated in the region of 520,000 tons per annum for Zimbabwe and 80,000 tons for Botswana.
  TAZARA has consequently treated this element as an emergency, for which investment plans will have to be considered separately on a short term basis. Hence, this capacity element has not been provided for in the revised demand projections by the TAZARA Corporate Planning Department. The tonnages that have recently been transported by TAZARA from Zimbabwe and Zaire are considered insignificant for purposes of projections.
- Consolidated SATCC traffic scenarios for the SADCC region which assume factors like political stability, free flow situation, security, corridor capacities and economic growth trends, are used to forecast Zambian cargo traffic.
- Malawi traffic is based on consolidated scenarios as per GITEC's study on Malawi Northern Transport Corridor.
- Local traffic (Zambia and Tanzania) projections are based mainly on: assumed increases in motive power; anticipated stagnation of the performance of the road transport industries; industrial and agricultural growth along TAZARA corridor; and intensified marketing for the countries' exports.

4. Project Evaluation

(a) Basic Assumption.

i. Sufficient Response to Demand

Increased capacity analysis based on TAZARA's 10-year traffic demand forecast is as calculated in Table K4. The assessed current TAZARA haulage capacity of 1.2 million tons could not be significantly exceeded without the AID project, which will assume, in terms of utilization per locomotive, an average of 950 tons of dead weight and 650 tons of freight from each of 17 additional locomotives. On this assumption operational frequency for cargo trains can be improved from the current 2 trains per day each way to 5 trains per day each way, to reach a tonnage of 2.1 million tons (1992/93 demand level). Hence, for purposes of this project's evaluation, it is assumed that traffic will not increase beyond the 1992/93 level.

The AID project assumes all extra diesel electric motive power will be devoted to hauling freight traffic. Extra motive power for increases in passenger traffic will be provided by other types of locomotives, thus making benefits to passenger traffic indirect to the AID project. As it has been estimated that the AID project will be a response to TAZARA's projected freight capacity demands up

to 1992/93 (2.1 million tons), the balance between AID-provided motive power and the required optimum power for the relevant planning period will have to be provided through other donors.

ii. Security

The project assumes that security will continue to be good to the extent that it would little affect the envisaged traffic growth pattern. If there were to be a security problem on the corridor, Zambia's routing options would inevitably be adversely affected.

(b) Project Inputs:

i. Investment Costs

Table 6 (Page 94) contains details of the Project's financial costs (1987 prices). Economic costs are calculated as financial costs net of taxes and interests. Cost distribution over the 10-year evaluation period has been adjusted to take account of procurement schedules and procedures.

ii. Recurrent Costs

The rationale for providing new locomotives as opposed to repowering old locomotives has been given in the Technical Analysis (Annex E). Since this project involves financing mainly new capital

equipment together with assistance in maintaining the existing fleet, it will result in minor additional recurrent costs. It has therefore been estimated that the annual incremental cost as a result of adding new diesel locomotives while maintaining existing diesel electrics will be about US$200,000 per annum in 1989/90, increasing at 5% per annum thereafter.

(c) Project Benefits:

Benefits for project evaluation purposes are identified in three ways, based mostly on the framework of a cost benefit analysis undertaken by the SATCC Planning Unit for the TAZARA 10-year Development Plan. Hence, the evaluation is undertaken to demonstrate the long-term effects on the economies of Zambia and Tanzania. Benefits to Malawi are also included because of the Malawi use of the Northern Transport Corridor to access the TAZARA system. Quantifiable benefits have been identified as follows for calculation of ERR:

- An assessment is made of the foreign exchange savings resulting from expansion of total Zambian traffic from the present level up to the projected level in the traffic forecasts. The assessment assumes that Zambia maintain its usage of the Beira Corridor to export about 20% of its copper. Although the Beira Corridor will be a viable, though possibly less secure

route, excess capacity to accommodate extra Zambian traffic will be a constrained by demand from Zimbabwe traffic. In the TAZARA 10-Year Development Plan, SATCC estimates that Zambian traffic which cannot be carried by TAZARA (if TAZARA capacity is not expanded) will be diverted to other ports, incurring US$85 per ton additional costs of which about 88% will be in foreign currency.

- Tanzanian local traffic which would normally go by rail is assumed to be diverted to road transport if TAZARA capacity is not expanded. According to SATCC estimates traffic going by road would incur costs of US$0.06 per ton-km (average distance travelled is 600 km). It is also assumed that the relationship between the economic costs of transporting one ton-km by road and rail is 4 to 1.

- The World Bank Staff Appraisal Report of the Malawi Northern Corridor, estimates that for Malawi transport cost savings as a result of using the Northern Transport Corridor instead of the southern route would be about US$40 per ton; i.e. total costs are 80% more when Malawi uses the southern route. This includes Malawi Cargo Centers transshipment. The assumption here is that Malawi will use the full capacity of the upgraded Nacala corridor and send remaining traffic

through the Northern Corridor as soon as it is functioning (end 1989).

The range of benefits has been narrowed down to evaluate the project from a conservative perspective. For example, diverted traffic from Botswana, Zaire and Zimbabwe has been excluded from the benefits stream. Also excluded are added income benefits arising as a result of additional revenue to Dar es Salaam port and TAZARA itself. A twenty-year evaluation period has been used because of the nature of the project's capital investment, and traffic increases after 1992/93 have not been considered. Because quantified benefits are directly related to provision of additional locomotive power, the timing of first year of benefits is aligned to arrival and actual utilization of additional locomotives i.e. the third year of the project (1989/90). Recognizing that motive power will need to be complemented by a requisite supply of wagons (part of the need is already being funded by Sweden) a 50/50 sharing of benefits between locomotives and wagons is assumed in determining actual benefits accruing from freight traffic as a result of the AID project.

(d) Economic Rate of Return and Sensitivity Analysis:

On the basis of the foregoing detailed parameters of the AID-funded project component, the economic rate of return, estimated at 29.48% (see Table K5), is reasonable and plausible.

Approximately two-thirds of the total investment costs contribute directly to increase of capacity. The remainder of the investment costs will convey indirect benefits through measures that maximize efficiency and minimize wastage. These benefits will accrue in the long term in strengthening the viability and potential of TAZARA. Considerable savings do accrue to Zambia (mainly foreign exchange), Tanzania and Malawi as shown by the cost benefit analysis in Table K4. Benefits do not start flowing until the third year of the project, although the initial disbursement will cover technical assistance which will inevitably jerk up efficiencies (an aspect not quantified in the evaluation). Benefits, therefore, have been treated from a very conservative perspective, thus making the economic return on investment on the low side.

A sensitivity analysis was undertaken to test sensitivity of returns to variations of assumptions held in the analysis.

- A pessimistic case involving a 10% increase of investment costs (in fact an unlikely case because the bulk of the input is in the form of a one-time procurement, and project cost estimates allow for contingent escalation of price at 8% and annual inflation of 5%).

- An overall 20% reduction of benefits (reduced in direct proportion to reduction in tonnage) to allow for possible operational problems and security problems to be experienced by TAZARA.

- A 100% increase of recurrent costs to allow for possible escalation of costs over the evaluation period.

	ERR
i. Investment costs increased by 10%	26.83%
ii. Benefits accruing to Zambia, Tanzania and Malawi reduced by 20% as a result of a proportional decrease of traffic	23.47%
iii. Recurrent costs increased by 100%	29.00%

The range of sensitivity tests still leaves the resulting ERRs within acceptable limits.

TABLE K4 - INCREASED CAPACITY ANALYSIS FOR GOODS TRAFFIC (1986-1995)
(in millions of metric tons)

Years	Forecast Demand TAZARA					Capacity Without Project 1986/1987					Increased Capacity Required				
	Zam. (Imp/Exp)	Tan. (Local)	Zam. (Local)	Malawi (Imp/Exp)	Total	Zam. (Imp/Exp)	Tan. (Local)	Zam. (Local)	Mal. (Imp/Exp)	Total	Zam. (Imp/Exp)	Tanz. (Local)	Zam. (Local)	Malawi (Imp/Exp)	Total
1986/87	0.682	0.445	0.100	0.135	1.362	0.601	0.392	0.088	0.119	1.200	0.081	0.053	0.012	0.016	0.162
1987/88	0.700	0.510	0.130	0.160	1.500	0.601	0.392	0.088	0.119	1.200	0.099	0.118	0.042	0.041	0.300
1988/89	0.701	0.590	0.140	0.210	1.641	0.601	0.392	0.088	0.119	1.200	0.100	0.198	0.052	0.091	0.441
1989/90	0.712	0.655	0.150	0.250	1.767	0.601	0.392	0.088	0.119	1.200	0.111	0.263	0.062	0.131	0.567
1990/91	0.724	0.730	0.170	0.290	1.914	0.601	0.392	0.088	0.119	1.200	0.123	0.338	0.082	0.171	0.714
1991/92	0.737	0.800	0.180	0.296	2.013	0.601	0.392	0.088	0.110	1.200	0.136	0.408	0.092	0.177	0.813
1992/93	0.750	0.870	0.200	0.302	2.122	0.601	0.392	0.088	0.119	1.200	0.149	0.478	0.112	0.183	0.922
1993/94	0.764	0.940	0.220	0.307	2.231	0.601	0.392	0.088	0.119	1.200	0.163	0.548	0.132	0.188	1.031
1994/95	0.779	1.010	0.245	0.313	2.347	0.601	0.392	0.088	0.119	1.200	0.178	0.618	0.157	0.194	1.147
1995/96	0.795	1.080	0.250	0.319	2.444	0.601	0.392	0.088	0.119	1.200	0.194	0.688	0.162	0.200	1.244

Sources: 1. TAZARA 10-Year Traffic Forecasts (Forecast demand)
2. SARP Estimates (Capacity without project)

Note: Figures for forecast demand assume no unusual changes in traffic patterns stemming from, for example, closure of borders.

TABLE K5 - COST BENEFIT ANALYSIS OF AID PROJECT (TAZARA)
(in millions of U.S. dollars)

Years	Investment Costs	Benefits Zambia (Imp/Exp)	Tanzania (Local)	Malawi (Imp/Exp)	Recurrent Costs	Net Flow
1	-8.926	-	-	-	-	- 8.926
2	-18.967	-	-	-	-	-18.967
3	-21.462	+4.717	+3.551	+2.620	-0.20	-10.774
4	- 0.674	+5.228	+4.563	+3.420	-0.21	+12.327
5		+5.780	+5.508	+3.540	-0.22	+14.608
6		+6.332	+6.453	+3.660	-0.23	+16.215
7		+6.332	+6.453	+3.660	-0.24	+16.205
8		+6.332	+6.453	+3.660	-0.25	+16.195
9		+6.332	+6.453	+3.660	-0.26	+16.185
10		+6.332	+6.453	+3.660	-0.27	+16.175
11		+6.332	+6.453	+3.660	-0.28	+16.165
12		+6.332	+6.453	+3.660	-0.29	+16.155
13		+6.332	+6.453	+3.660	-0.30	+16.145
14		+6.332	+6.453	+3.660	-0.31	+16,135
15		+6.332	+6.453	+3.660	-0.32	+16.125
16		+6.332	+6.453	+3.660	-0.33	+16.115
17		+6.332	+6.453	+3.660	-0.34	+16.105
18		+6.332	+6.453	+3.660	-0.35	+16.095
19		+6.332	+6.453	+3.660	-0.36	+16.085
20		+6.332	+6.453	+3.660	-0.37	+16.075

ERR = 29.48%

Notes: Investment costs include inputs from AID, TAZARA and other donors. Costs are financial costs based on 1987 estimates excluding taxes, duties and interest. the investment costs allow for price escalation and inflation. No shadow exchange rates were used for the local component of project as the estimates were made in dollars due to the fluctuations and relatively unstable local currencies of both countries.

ANNEX L

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT COUNTRY:	Southern Africa Regional
PROJECT TITLE AND NUMBER:	Regional Transport Development - Assistance to TAZARA (690-0240)
FUNDING:	FY 87
IEE PREPARED BY:	Denis Light, Regional Engineer
ENVIRONMENTAL ACTION RECOMMENDED:	Negative Determination

JUSTIFICATION:

The Project proposed will supply new diesel electric locomotives to TAZARA (Tanzania-Zambia Railway Authority) together with spare parts, workshops, tools and equipment and the provision of technical assistance for use in operating, maintaining and repairing the locomotives and diesel locomotives already in use.

The railway line exists for some 1860 kilometers from Dar es Salaam in Tanzania to Kapiri Mposhi in Zambia. Locomotives have been operating along this line since 1976, and the main workshops for locomotives were built at that time.

The high-powered and more efficient locomotives to be procured this project are diesel electric (smokeless) locomotives which will replace Chinese furnished diesel hydraulic locomotives.

The tools and equipment procured will be especially designed for use on the electric diesel locomotives and the Technical Assistance personnel will train existing mechanics in their use.

DISCUSSION OF ENVIRONMENTAL IMPACTS:

The Project will not have a negative effect on the environment except for transitory and minimal effects related to the extension to be built for the workshop in Mbeya, Tanzania. The extension will entail the construction of annexes to the existing locomotive repair workshop to be used for demonstration and storage rooms.

The proposed expansion would consist of an area of about 1460 sq. m. (27m x 54m) for heavy repair work (HR) on DE locomotives. The flooring will be provided with three built-in run through tracks. Each track will have under-floor pit arrangements similar to the existing facility. The proposed expansion will be adjacent to the north wall of the existing light-repair shop. The proposed HR workshop will be serviced with overhead 30 ton gantry crane for removal and replacement of major components.

The structural and architectural features of the proposed expansion will conform with the design of the existing structures.

Adjacent to the north wall of t he proposed HR workshop, another additional structure is proposed for the storage of parts, materials and a demonstration classroom to conduct necessary training sessions

for repairs on DE locomotives. The proposed additionwould be an area of abut 1300sq. m. (24m x 54m).

Although land will be cleared for the annexes, the land is already part of the railroad compound at Mbeya. No expansion of the existing compound will be required.

There will be no effect to drainage or erosion or the need for gravel or borrow pits. There will also be no increase in noise or air pollution because of the provision of additional smokeless locomotives, and indeed noise and air pollution will be reduced because the locomotives to be procured are noiseless and smokeless unlike those to be replaced.

The project will not cause any inefficient utilization or waste of natural resources or affect wildlife or vegetation. Postive changes will result from improved access of the populations of Tanzania, Zambia, Zaire, Malawi and other Southern African coutries to import and export markets as well as local markets. Training and supply of materials will assist in upgrading skills of the TAZARA mechanics.

RECOMMENDATIONS FOR ENVIRONMENTAL ACTION:

Resulting or expected improvements in railway operation due to the additional locomotive power will have positive socio-economic effects, not only for the population within the railroads zone of influence, but also in terms of flow of goods and other product

availability in Zambia, Zaire, Malawi and other Southern Africa countries. Environmental impacts such as temporary disturbances caused by the minor construction at Mbeya, will be minimally negative only and offset by the net positive impacts of substitution of noiseless, smokeless, and efficient locomotive. Therefore, a negative determination is recommended.

APPROVAL:

X

BUREAU ENVIRONMENTAL OFFICER:

Bessie L. Boyd, AFR/TR/PRO

DATE: 09/01/87

CONCURRENCE:

GC/AFR [illegible] S.A.Krikorian, 9/1/87

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SPARE PARTS REQUIREMENTS

	Description	Part No.	Quantity	Remarks
	TURBOCHARGER	Type 7S161201		To be overhauled
1.	Turbo Gasket kit	150 x 1083-1	12	
2.	Bearings (Blower End)	126 x 1223-1	12	Depending on physical condition
3.	Bearing (Turbine End)	126 x 1222-1	12	Depending on physical condition
4.	Magnetic pick up	126 x 1389-1	6	Depending on physical condition
5.	Loctite RTV 106	41B562849P156	20	
6.	Turbo End Seal	126 x 1562-1	12	Depending on physical condition
7.	Blower End Seal	126 x 1563	12	Depending on physical condition
8.	Seal	126 x 1461	48	Depending on physical condition
9.	Seal	115 x 2245	12	Depending on physical condition
10.	Balancing machine		1	For balancing rotors impelers etc
11.	Turbocharger Unit	751612C1	1	For interchanging
	ENGINE CONTROL SPEED GOVERNOR TYPE			
1.	Repair Kit	150 x 1112-2	12	Depending on physical condition
2.	Modulator Kit	150 x 1079	12	
3.	Governor Cnv Kit	150 x 1123	12	
	DIESEL ENGINE			
1.	Cylinder head Ass to main frame gasket kit	150 x 1024-1	12	
2.	Cylinder head and liner installation gasket kit	150 x 1023-6	12	
3.	Water Seal	125 x 1015-3	12	
4.	Water pump overhaul kit	150 x 1069	12	

No.	Description	Part No.	Quantity	Remarks
	OS link ring seal	132 x 1491	12	For overspeed link
	OS link ring seal	132 x 1492	12	
	Mechanical Seal	125 x 1015-8	12	For water pump
	Umbrella	123 x 1001	288	
	Nozzle Kit	150 x 1095	144	
	Pump and nozzle Kit	150 x 1087	144	
	Bearing	132 x 1093-1	20	
	Ring Kit	150 x 1044	144	
	Fuel hose	140 x 2293	168	
14.	Conrod bearings	117 x 1042-2	72	Depending on phsical
15.	Conrod bearings	117 x 1050	72	condition
16.	Plates	123 x 1058	100	Depending on physical
		123 x 1044	100	condition
		123 x 1059	100	"
		123 x 1086	100	"
		123 x 1060	100	"
		123 x 1061	100	"
		123 x 1062	100	"
		123 x 1063	100	"
	Shims	123 x 1046	100	
		123 x 1047	100	
		123 x 1048	100	
		123 x 1049	100	
		123 x 1050	100	
	Loctite	147 x 1988-1	10	
	Shims	132 x 1022	100	
		132 x 1023	100	
		132 y 1024	100	
		132 x 1025	100	
20.	Cam bearings	116 x 1070-1	160	Depending on physical condition
21.	Crankshaft deflection gage	147 x 1227	1	To measure deflection of the crankshaft
22.	Water pump overhaul kit	150 x 1069	12	
23.	Water pump installation kit	150 x 1070	12	
24.	Bearings	125 x 1075	12	
	Bearings	125 x 1026	12	

S. No.	Description	Part No.	Quantity	Remarks
25.	Lub oil pump overhaul kit	150 x 1145	12	
	Lube oil pump installation kit	150 x 1139	12	
27.	Water inlet header kit	150 x 1116	144	
28.	'O'ring	115 x 1268	216	
		115 x 1902-1	72	
		115 x 1865	24	
29.	Ring	128 x 1447	24	
30.	Gasket	128 x 1413	12	
31.		128 x 1357	72	
32.	Seal	128 x 1358	144	
33.	Gasket	128 x 1006	144	
34.	Compount	147 x 1640	10	
35.	Bushing	115 x 1876-1	24	
36.	Spring	146 x 1059-1	24	
37.	Seal	132 x 1491	12	Overspeed link
		132 x 1492	12	Overspeed link
38.	Ring	132 x 1491	12	Overspeed link
		N901P412	12	Overspeed link
39.	'O'Ring	115 x 1902-1	144	Engine
40.	Lub oil filters	2 x 4223	96	Engine
41	Fuel filters	132 x 1250	12	
42.	Air filters	41A216508P4	264	
43.	Sealant	RTV/10.3 497A806P60	40	
44.	Sealant	41A212051P5	40	
45.	CHEC III Electronic Cards	Electronic	3 panels	
46.	Motor Speed Panel	(Sentry Syst)	3 panels	

S/No.	Description	Part No.	Quant-ity	Remarks
	Exciter/Aux.Generator	GY27M1		
.	Commutator Grinder Kit	P8843613G1	1	
1.	Carbon brushes	8828400Pa	288	
2.	Puller Set	41B532339G1	1	
1.	Bearings (roller)	8864951P29	24	
	(ball)	8864950P81	24	
	Fuel Booster Pump Motor	41C61040lG2		
1.	Carbon Brushes	2 x 4072	48	
2.	Bearings	626A259ABP1	24	
	Dynamic Braking Blower Motor	GA57		
1.	Bearings	Not obtained	2	
2.	Carbon brushes	Not obtained	48	
	Head Lights			
1.	Lamp 200PAR 30V	41A210446P1	48	
	Generators	GTA11C1		
1.	Carbon brushes	41A235676P4	72	
2.	Brush Holder with pressure arm	41B531649G2	72	
	Traction Motors	GE 761		
1	Carbon brushes	41A235897P4	576	
	Bearings (roller)	8864951P1148	72	
	(ball)	8864950P169	72	
2.	Connecting Sleeves	41A232340P3	576	
3	Speed Sensor	41B537105G1	72	
4.	Brush Holder	41C63399GG2	72	
5.	Dust Guard	994918294	72	
6.	Mega Insulation Tester	0-500 megaohms 0-1000 Volts	1	
7.	Set of puller tools	884357BG1	1	
8.	Commutator Grinder	994907SG1	1	
9.	Pinion Puller Kit	994918294	1	
	Cable Clamps			

S/No.	Description	Part No.	Quantity	Remarks
	Compressor/Exhauster	6 CD x 44C		
	Part No.	41A2036495		
1.	Safety Valve	10526-0060	12	
2.	Gasket	514650	36	
3.	Gasket	516274	12	
4.	Gasket	514644	12	
5.	"	514627	12	
6.	"	553399	12	
7.	"	514644	24	
8.	"	514638	24	
9.	"	514637	24	
10.	"	514644	24	
11.	"	514651	12	
12.	"	514627	12	
13.	"	514626	12	
14.	"	514644	48	
15.	"	514651	48	
16.	"	514027	48	
17.	"	514626	48	
18.	Chain	584006	12	
19.	Mechanical Seal	585165	12	
20.	'O'Ring	585166	12	
21.	Bearings	585168	12	
22.	Gasket	552658	24	
23.	Gasket	573554	12	
24.	Gasket	584525	12	
25.	"	572403	12	
26.	"	563411	12	
27.	Ring	514624	24	
28.	Ring	520128	24	
29.	"	523429	24	
30.	"	523430	24	
31.	"	520130	24	
32.	"	523432	24	
33.	"	523427	24	
34.	Bearings	540589	72	
35.	"	541078	72	
36.	"	540590	72	
37.	Ring	520123	120	
38.	"	523401	120	
39.	"	523402	120	
40.	"	520133	120	
41.	""	523404	120	
42.	"	523405	120	

S/No.	Description	Part No.	Quantity	Remarks
43.	Ring	566271	24	
44.	'O'Ring	575929	24	
45.	Gasket	552660	12	
46.	Bearing	549826	24	
47.	Spring	567379	12	
48.	Shims	567809	60	
49.	"	567810	24	
50.	"	567811	24	
51.	Gasket	522758	12	
	SKF/FAG BEARINGS	6 1/2" x 12"		
1.	Bearings	6 1/2" x 12"	6	
2.	Mobile Unit for mountling and dismanting of bearings		1	
3.	Mounting and dismanting of seals	Fag 157317/1-P	1	
4.	Ram	Fag 157317/2-P	1	
5.	Seal Case [illegible]	Fag 157317/3-P	1	
6.	Counter rent	Fag 157317/4-P	1	
7.	Adaptor ring bearings	Fag 157317/6-P	2	
8.	Support ring	Fag 157317/5-P	1	
9.	Press for mounting and dismanting of of seals	Order No. 50209 OTC owatón tool company Minesota		Height 328mm Stroke 150mm
	Misc.			
1. *	Complete assembled bogies		2	For easy interchangiable of bogies
2.	Tool Kits			
	- Mechanical Eng. tool kits		3	For easy repair work
	- Electricians' tool kits		4	

* NOT NECESSARY PER TALARA ACME

ADD: Turbo casings 4

Crank case 1

Spares/components for rebuilding one engine

ANNEX M[2]

GENERAL ELECTRIC

TRANSPORTATION SYSTEMS BUSINESS OPERATIONS
GENERAL ELECTRIC COMPANY • 2901 EAST LAKE ROAD • ERIE, PENNSYLVANIA 16531

May 5, 1987

Mr. J. Forman
Assistant Vice President
Parsons, Brinckerhoff, Quade & Douglas, Inc.
1626 Glen Meadow
Schenectady, NY 12309

RE: TAZARA

Dear Mr. Forman:

Confirming our telex of April 7, 1987, and based upon our discussions with you in Dar Es Salaam the week of March 30, 1987, we are pleased to provide the following quotation for our Model U30C diesel electric locomotives for TAZARA. This quotation modifies our April 7 telex in that the quantities of locomotives involved and the spare parts recommendations are based on quantities up to 15. This change is based upon our phone conversation on May 1, 1987.

Locomotive

General Electric Model U30C diesel electric locomotives similar in configuration to those previously supplied to Tazara and equipped with General Electric engines including clasp brakes and derailment beams in accordance with Tazara requirements. Prices quoted are estimated for locomotives delivered F.O.B. factory within 10 months from receipt of order, complete with all technical and financial details, subject to prior sale of our manufacturing capacity.

Quantity 10 locomotives ..... US $1,395,000 each
Quantity 11-15 locomotives ..... US $1,350,000 each

Estimated ocean freight and insurance charges per locomotive are $75,000 from U.S. East Coast/Gulf Port to Dar Es Salaam. Ocean freight and insurance costs would be billed at actuals.

Service Engineering

At the request of Tazara, we have checked into the possibility of extending the services of Mr. H. Anton, who is currently in Tanzania. Based upon the exchange rate of 1.8 DM per U.S. dollars, the price for extended engineering service cover - up to three years - is as follows:

Year 1 ..... $230,000
Year 2 ..... $240,000
Year 3 ..... $250,000

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Spare Parts

General Electric's spare parts recommendation to support the U30C fleet is presented in the following categories:

1. Consumable parts, which include such items as filters, brushes, contact tips, light bulbs, brake shoes and wear plates. This list is compiled on the basis of five years of operation. However, it is recommended that filters be ordered in quantities adequate for 2 years of operation.

2. Protective parts recommended to have on hand to adequately protect the fleet in the event of failure, accident, etc. This lot of parts also contains the parts required to perform the first overhaul at four years. The overhaul parts were included in this section because they have protective value as well. Said overhaul parts would total approximately $30,000 per locomotive.

   A. Diesel Engine Arrangement
   B. Mechanical and Electrical Equipment
   C. Governor

3. Capital Spares - Recommended estimates for the different categories of parts quoted in US $000 are as follows:

Locomotive Fleet Size	5	10	15
Consumables	154.3	308.6	462.8
Protective			
A - Engine	550.9	738.2	907.3
B - Elec. & Mech.	359.5	478.0	547.1
C - Governor	1.8	3.6	5.5
Capital	380.3	380.3	431.8
Total	1446.8	1908.7	2354.5
Est. Freight & Insurance (3%)	43.4	57.3	70.6
Total CIF	1490.2	1966.0	2425.1

Lists of materials recommended, equaling the above dollar amounts are enclosed for your information.

Material prices quoted are valid for acceptance for four months, i.e. until August 31, 1987. As indicated earlier, the ocean freight and insurance costs are estimates. We will bill ocean freight and insurance charges at actual cost. The service engineering charges are subject to adjustment based upon the fluctuations of the DM vs. US dollar.

This quotation is subject to our standard Conditions of Sale, form GE 43H, copy attached for your ready reference.

In specific response to questions raised during our discussions in Dar Es Salaam, I wish to advise as follows:

1. Shelf life of spares in a heavy moisture environment: Except for paper filter elements we would not have any special concern for the life of the parts being shortened due to high humidity provided adequate protection is taken in handling and storing the goods. Materials susceptible to moisture damage are packed in special moisture resistant paper and, where necessary, materials are sprayed with rust inhibitors.

   Paper filter elements should preferably be ordered in quantities equaling two years normal service because: A) the space required to properly store is quite large; and, B) the paper may begin to deteriorate after 3 years or so with resultant shortened life in service.

2. Source of gasketing material for Chinese locomotives: We do not cut many gaskets ourselves. When the occasion does arise that we want to cut our own gaskets, we would have to purchase the material from a gasket cutter because the quantity we would require would not be of interest to the material manufacturers. Names of manufacturers of gasketing material that we use are: Armstrong, Chicago Rawhide, Clinger, Garlock, Parker and Precision. We do not deal directly with any of the above companies as explained earlier. Mailing addresses and phone numbers for any of the above should be available from your Thomas' Register.

3. Incorrect placement of an electronic card from "old" wheelslip system into "new" wheelslip panel or vice versa: The system is designed so that if any card is placed in this wrong slot, or if the wrong cards are put into a panel:

   A. A wheelslip light would energize on the driver's console.

   B. The locomotive will not load.

   C. Corrective action would be required before this locomotive could move under its own power.

   D. No damage would be inflicted on the card as a result of it being placed in the wrong slot or the wrong panel.

4. Varnish applied by GE Service Shops during a "clean bake and varnish" is or is not VPI'd? I checked with our Cleveland Service Shop and was advised the current practice for a basic overhaul is to VPI the armature and frame on any GE traction motor. Similar work done by the GE Service Shop on Electro-Motive Division of General Motors traction motors, the policy is to VPI armature only, unless a customer asks for and agrees to pay extra for the frame.

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This has not always been the policy. However, it is strongly recommended that anytime varnish is applied to a motor frame or armature it be VPI'd. This is the only way to assure proper penetration of the varnish. Applying varnish without VPI might tend to give a false sense of security.

As promised during our phone conversation of May 4, 1987 we will provide quotation for materials required by Tazara for the existing Krupp fleet as well as special tools as soon as possible after we receive the list from you.

We appreciate this opportunity to provide information on General Electric locomotives and spare parts. In the event I have overlooked any questions raised or have not provided a complete answer, please advise and I will attempt to rectify the situation as quickly as possible.

Very truly yours,

T.E. Nelson

CEWP:1063F

GENERAL ELECTRIC COMPANY

CONDITIONS OF EXPORT SALE

NOTICE: THE OFFER, ORDER ACKNOWLEDGEMENT, ORDER ACCEPTANCE OR SALE OF ANY PRODUCTS COVERED HEREIN IS CONDITIONED UPON THE TERMS CONTAINED IN THIS INSTRUMENT. ANY ADDITIONAL OR DIFFERENT TERMS PROPOSED BY BUYER ARE OBJECTED TO AND WILL NOT BE BINDING UPON SELLER UNLESS SPECIFICALLY ASSENTED TO IN WRITING BY SELLER.

ARTICLE I - PRICES

Prices include the cost of (i) Seller's usual inspection and factory tests, (ii) Seller's usual packing (or containerizing, if applicable) for export, and (iii) freight by Seller's usual means to alongside vessel at the point of export designated by Seller (but not including cost of insurance, or charges for pier handling, marshaling, lighterage and heavy lift). Insurance to cover the inland shipment shall be arranged by Seller at Buyer's request if Seller is arranging for the export shipment pursuant to Article III.

ARTICLE II - DELIVERY, TITLE AND RISK OF LOSS

A. Except as stated in Paragraph B below, Seller shall deliver the Products to Buyer F.C.B. factory. Partial deliveries shall be permitted. Upon delivery, title to the Products and all risk of loss or damage shall pass to Buyer. Delivery times are approximate and are dependent upon prompt receipt by Seller of all material and information necessary to proceed with work without interruption.

B. If any part of the Products cannot be shipped from the point of inland shipment to the vessel when ready due to any cause referred to in Article V, Seller may place such Products in storage (which may be at the place of manufacture). In such event, Seller shall notify Buyer of the placement of any Product in storage, (ii) Seller's delivery obligations shall be deemed fulfilled and title and all risk of loss or damage shall thereupon pass to Buyer, (iii) any amounts otherwise payable to Seller upon delivery shall be payable upon presentation of Seller's invoices therefor and its certification as to such cause, (iv) promptly upon submission of Seller's invoices, Buyer shall reimburse Seller for all expenses incurred by Seller, such as preparation for and placement into storage, handling, storage, inspection, preservation and insurance, and (v) when conditions permit and upon payment of all amounts due hereunder, Seller shall assist and cooperate with Buyer in any reasonable manner with respect to the removal of any Product which has been placed in storage.

ARTICLE III - EXPORT SHIPMENT

A. In the event Buyer wishes to arrange for export shipment, Buyer shall inform Seller by so indicating on the order. In the absence of such indication, or if Seller exercises its rights under Paragraph B of Article VI, Seller shall arrange for (i) export shipment to Buyer's country and (ii) marine warehouse-to-warehouse insurance (including war risk, if available). Buyer shall pay Seller for all fees and expenses, including, but not limited to, those covering preparation of consular documents, consular fees, ocean freight, storage, insurance and Seller's then current fee for such services, notwithstanding any extension of credit to Buyer, all such charges shall be promptly reimbursed by Buyer in U.S. Dollars upon submission of Seller's invoices therefor.

B. In performing any of the foregoing services, Seller shall comply with any reasonable instructions of Buyer or, in the absence thereof, shall act according to its best judgment. In so acting on Buyer's behalf, neither Seller nor its agents shall be liable for negligence or for any special, consequential, incidental, indirect or exemplary damages to Buyer resulting therefrom.

ARTICLE IV - GOVERNMENTAL AUTHORIZATIONS

A. The party that arranges for export shipment (or Buyer's designated export agent) shall be responsible for the timely application in its own name for any required U.S.A. export license. Buyer shall be responsible for timely obtaining and maintaining any required import license, exchange permit or any other governmental authorization. Buyer and Seller shall assist each other when such help is reasonably possible. Seller shall not be liable if any authorization of any government is delayed, denied, revoked, restricted or not renewed, and Buyer shall not be relieved thereby of its obligations to pay Seller for its Products or any other charges which are the obligation of the Buyer hereunder.

B. All shipments hereunder shall at all times be subject to the export control laws and regulations of the U.S.A. and any amendments thereof. Buyer agrees that it shall not make any disposition of U.S.A.-origin Products purchased from Seller, by way of transshipment, re-export, diversion or otherwise, other than in and to the ultimate country of destination specified on Buyer's order or declared as the country of ultimate destination on Seller's invoices, except as said laws and regulations may expressly permit.

ARTICLE V - EXCUSABLE DELAYS

A. Seller shall not be liable for delays in delivery or failure to perform due directly or indirectly to (i) causes beyond Seller's reasonable control, (ii) acts of God, acts (including failure to act) of any governmental authority (de jure or de facto), wars (declared or undeclared), governmental priorities, port congestion, riots, revolutions, strikes or other labor disputes, fires, floods, sabotage, nuclear incidents, earthquakes, storms, epidemics, or (iii) inabilities due to causes beyond Seller's reasonable control timely to obtain either necessary and proper labor, materials, components, facilities, energy, fuel, transportation, governmental authorizations or restrictions, material or information required from the Buyer. The foregoing shall apply even though any of such causes exists at the time of the order or occurs after Seller's performance of its obligations is delayed for other causes.

B. Seller shall notify Buyer of any delay or failure excused by this Article and shall specify the revised delivery date as soon as practicable. In the event of such delay subject to Paragraph C of this Article, there shall be no termination and the time of delivery or of performance shall be extended for a period equal to the time lost by Seller by reason of the delay.

C. If delay excused by this Article extends for more than 60 days and the parties have not agreed upon a revised basis for continuing the work at the end of the 60 days, including adjustment of the price, then either party (except where delay is caused by Buyer, in which event only Seller), upon 30 days' written notice, may terminate the order with respect to the unexecuted portion of the work, whereupon Buyer shall promptly pay Seller its termination charges determined in accordance with Seller's standard accounting practices upon submission of Seller's invoices therefor.

ARTICLE VI - PAYMENT

A. Payment shall be made in U.S. Dollars in New York as follows:

(i) On an order of fifteen thousand U.S. Dollars (U.S. $15,000) or less, payment shall be made simultaneously with the placing of the order, where legal, of the Buyer's country permit.

(ii) On an order over fifteen thousand U.S. Dollars (U.S. $15,000) or less, if any of the Buyer's country forbid compliance with Paragraph (i) above, payment shall be made through a letter of credit to be established by Buyer at its expense. All costs, including any bank confirmation charges, relating to such letter of credit are for the account of the Buyer. All letters of credit shall be in favor of and acceptable to Seller, shall be consistent with the terms of this instrument, shall be maintained in sufficient amounts and for the period necessary to meet all payment obligations, shall be irrevocable and issued by, or confirmed by, a bank in New York acceptable to Seller, within 15 days after acceptance of the order, shall permit partial drawings and shall provide for pro rata payments upon presentation of Seller's invoices therefor and either Seller's certificate of delivery F.C.B. factory or of delivery into storage with certification of cause therefor and for the payment of any charges for storage, export shipment, price adjustments, and cancellation or termination.

B. In the event that Seller agrees to any deviation from the cash or the letter of credit requirements set forth above, Seller reserves the right to arrange for export shipment of the Products.

C. If Buyer fails to fulfill any condition of its payment obligations, Seller may (i) withhold deliveries and suspend performance, or (ii) continue performance if Seller deems it reasonable to do so, or (iii) place the Products in storage pursuant to the provisions of Article II hereof. In any event, the costs incurred by Seller as a result of Buyer's non-fulfillment shall be payable by Buyer upon submission of Seller's invoices therefor. Seller shall be entitled to an extension of time for performance of its obligations equaling the period of Buyer's non-fulfillment whether or not Seller elects to suspend performance. If such non-fulfillment is not rectified by Buyer promptly upon notice thereof, Seller may cancel the agreement and Buyer shall pay Seller its charges for cancellation upon submission of Seller's invoices therefor.

ARTICLE VII - TAXES AND DUTIES

A. All U.S.A. taxes are included in the price except sales, use, excise, value-added and similar taxes which have been excluded based on the assumption that the transaction involves exportation. All rights to drawback of U.S.A. customs duties paid by Seller with respect to Products (or material or components thereof) owning to and shall remain in Seller. If Buyer arranges for export shipment, Buyer agrees to furnish without charge evidence of exportation or other evidence of tax or duty exemption acceptable to the taxing or customs authorities when requested by Seller, in lieu of which, the amount of any U.S.A. taxes or duties imposed on Seller in connection with the transaction shall be promptly reimbursed in U.S. Dollars by Buyer to Seller upon submission of Seller's invoices therefor.

B. Any taxes (including income, stamp and turnover or value-added taxes), duties, fees, charges or assessments of any nature levied by any governmental authority other than of the U.S.A. in connection with this transaction, whether levied against Buyer, against Seller or its employees or against any of Seller's subcontractors or their employees, shall be the responsibility of the Buyer and shall be paid directly by Buyer to the governmental authority concerned. If Seller or its subcontractors, or the employees of either, are required to pay any such levies and/or fines, penalties, or assessments in the first instance, or as a result of Buyer's failure to comply with any applicable laws or regulations governing the payment of such levies by Buyer, the amount of any payments so made, plus the expense of currency conversion, shall be promptly reimbursed in U.S. Dollars by Buyer upon submission of Seller's invoices therefor.

[illegible] WARRANTIES

[illegible] warrants that Products manufactured by Seller shall be free from defects [illegible] workmanship and title, and shall be of the kind and quality specified or [illegible] by Seller. Seller's obligations set forth below shall apply only to failures [illegible] the following warranties, except as to title, occurring within fifteen (15) [illegible] for title claims pursuant to Article II of which Seller is given written [illegible] months (3 years of such occurrence and provided the Product or part [illegible] made available to Seller as specified by Seller.

B. If any Product or part thereof fails to meet the foregoing warranties (except as to [illegible] title), Seller shall, at its option, repair or replace same. In either case F.O.B. [illegible] the same basis as described in Article I. Any such failure shall not be [illegible] the extension of the duration of the warranty specified in this Article VIII. If [illegible] failure of defect cannot be corrected by Seller's reasonable efforts, the parties shall [illegible] negotiate an equitable adjustment.

C. Seller's obligations under Paragraph B above shall not apply to any Product or part thereof which (i) is normally consumed in operation, or (ii) has a normal life [illegible] shorter than the warranty period specified in Paragraph A, or (iii) is not [illegible] stalled, installed, used, maintained or repaired or is modified other than [illegible] Seller's instructions or approval, or (iv) has been subjected to any other [illegible] use of detrimental exposure, or has been involved in an accident.

D. [illegible] except for any Products not manufactured by Seller, except for integral [illegible] any Products to which the warranties set forth above shall apply). Seller [illegible] warrants only the warranty, if any, given by the manufacturer shall [illegible]

E. [illegible] Article I this Article sets forth the exclusive remedies for claims [illegible] Seller's or nonconformity of the Products, whether the claim is in [illegible] with the producing negligence) or otherwise. Except as set forth in [illegible] warranties are in lieu of all other warranties, whether oral, [illegible] implied or statutory. NO IMPLIED OR STATUTORY WARRANTIES [illegible] MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL [illegible]

ARTICLE IX - PATENTS

A. Seller warrants that any Product (or part thereof) manufactured by Seller and [illegible] hereunder shall be free of any rightful claim of any third party for infringement [illegible] any U.S.A. patent. If Buyer notifies Seller promptly of the receipt of any claim [illegible] such Product infringes a U.S.A. patent and gives Seller information, assistance [illegible] exclusive authority to settle and defend such claim, Seller shall, at its own [illegible] and option, either (i) settle or defend such claim or any suit or proceeding [illegible] thereon and pay all damages and costs awarded therein against Buyer, or [illegible] procure for Buyer the right to continue using such Product, or (iii) modify the [illegible] that becomes non-infringing, or (iv) replace the Product with a non-[illegible] Product, or (v) remove the Product and refund the purchase price (less [illegible] the depreciation) and any transportation or installation costs which have been [illegible] separately paid by Buyer. If, in any such suit arising from such claim, the [illegible] continued use of the Product for the purpose intended is enjoined by any court of [illegible] competent jurisdiction, Seller shall, at its option, take one or more of the actions [illegible] under (i), (ii), (iii), (iv) or (v) above. The foregoing states the entire liability of Seller for [illegible] infringement of any Product and is subject to the limitation of total liability set [illegible] Article X.

B. The preceding paragraph shall not apply (i) to any Product (or part thereof) which is manufactured to Buyer's design or (ii) to the use of any Product (or any part thereof) furnished hereunder in conjunction with any other apparatus or material. As to any Product, part or use described in the preceding sentence, Seller assumes no liability whatsoever for patent infringement.

C. With respect to any Product (or part thereof) furnished hereunder which is not manufactured by Seller, only the patent indemnity of the manufacturer, if any, shall [illegible]

D. The patent warranty and indemnity obligations recited above are in lieu of all [illegible] patent warranties and indemnities whatsoever, whether oral, written, ex-[illegible] implied or statutory.

ARTICLE X - LIMITATIONS OF LIABILITY

A. The total liability of Seller, including its subcontractors or suppliers, on any [illegible] claims, whether in contract, warranty, tort (including negligence or patent [illegible] otherwise, arising out of, connected with, or resulting from the [illegible] performance or non-performance of any agreement resulting herefrom or from the [illegible] manufacture, sale, delivery, resale, repair, replacement or use of any Product or the [illegible] of any service, shall not exceed the price allocable to the Product or service which gives rise to the claim. Except as to title, any such [illegible] shall terminate upon the expiration of the warranty period specified in Article [illegible]

B. In no event, whether as a result of breach of contract, warranty, tort (including negligence or patent infringement) or otherwise, shall Seller or its subcontractors or suppliers be liable for any special, consequential, incidental, indirect or exemplary damages, including, but not limited to, loss of profit or revenues, loss of use of the Products or any associated equipment, cost of capital, cost of substitute products, facilities, services or replacement power, downtime costs, or claims of Buyer's customers for such damages. If Buyer transfers title to or leases the Products sold hereunder to, or otherwise permits or suffers use by, any third party, Buyer shall obtain from such third party a provision affording Seller and its subcontractors and suppliers the protection of the preceding sentence.

C. If Seller furnishes Buyer with advice or other assistance which concerns the Product supplied hereunder or any system or equipment in which any such Product may be installed and which is not required by the terms of this instrument or by a subsequent agreement resulting herefrom, the furnishing of such advice or assistance shall not subject Seller to any liability, whether in contract, warranty, tort (including negligence or patent infringement) or otherwise.

ARTICLE XI - NUCLEAR USE

A. Products and services sold hereunder are not intended for use in connection with the [illegible] shall not be used in connection with the use or handling of nuclear materials or the construction or operation of a nuclear installation. Buyer warrants that it will not use such Products or services for such purposes, or permit others to use such Products or services for such purposes, unless such use is agreed to in writing by Seller.

B. If, in breach of the foregoing, any such use occurs, Seller disclaims [illegible] for any nuclear or other damages, injury or contamination, and Buyer shall indemnify Seller against any such liability, whether as a result of breach of contract, warranty, tort (including negligence) or otherwise.

ARTICLE XII - GENERAL

A. Any Products furnished by Seller hereunder shall comply with the [illegible] local laws and regulations of the U.S.A. applicable to the manufacture, [illegible] and shipment of such Products as of the date of Seller's quotation (and shall comply with any amendments thereto which may have come into effect prior to the time Products are furnished, provided that the price and, if necessary, delivery be equitably adjusted to compensate Seller for the effect of compliance with such amendments). Seller shall not comply with any law, regulation or requirement which would subject Seller to criminal or civil penalties or loss of tax benefits under any federal, state or local law or regulation of the U.S.A., and the furnishing of a quotation or acknowledgement of any order does not constitute (i) [illegible] an agreement to furnish any information which would subject Seller to any of the above mentioned penalties or loss of tax benefits. Seller shall not comply with any other law, regulation or requirement which would increase Seller's cost unless there is an appropriate adjustment in price.

B. The delegation or assignment by Buyer of any or all of its duties or rights hereunder without Seller's prior written consent shall be void.

C. Any representation, understanding, proposal, agreement, warranty, course of dealing or trade usage not contained or referenced herein shall not be binding on Seller. No modification, amendment, rescission, waiver or other change shall be binding on Seller unless assented to in writing by Seller.

D. The validity, performance and all matters relating to the interpretation and effect of any agreement resulting herefrom and any amendment thereto shall be governed by the internal substantive law of the State of New York, U.S.A.

E. The provisions of any agreement resulting herefrom are for the benefit of the parties hereto and not for any other person except as specifically provided herein.

F. Unless otherwise specified by Seller, any quotation of Seller shall expire [illegible] days from the date of issuance and may be modified or withdrawn at any time prior to the date of Buyer's order.

G. Buyer may terminate an order only upon paying Seller its termination charges determined in accordance with Seller's standard accounting practices upon submission of Seller's invoices therefor. Termination of an order shall not relieve either party of any obligation arising out of work performed prior to termination.

H. As used throughout this instrument, (i) the term Product (or products) is [illegible] to include all equipment, materials, supplies, components, services and engineering, design and data, or other work which Seller has contracted to supply, and (ii) the term Seller is defined to mean General Electric Company, U.S.A.

I. The invalidity, in whole or in part, of any Article or Paragraph hereof shall not affect the validity of the remainder of such Article or Paragraph or of any agreement resulting herefrom.

GENERAL ELECTRIC

APPENDIX E
ITEM 1
CONSUMABLE PARTS

CONSUMABLE SPARE PARTS - 5 YRS
QUANTITY INDICATED IS PER LOCOMOTIVE

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
FILTERS					
1	480	2X4222-E	OIL FILTER	13.75	6,600.00
2	30	41A216508P4	ELEMENT	50.40	1,512.00
3	20	132X1570	FUEL FILTER	48.60	972.00
4	23	41A216205P1	ELEMENT	15.10	347.30
5	1	41B510720G2	STRAINER	374.00	374.00
6	13	41A211851P1	FILTER	37.10	482.30
			SUB-TOTAL		10,287.60
BRUSHES					
7	125	6727520P1	BRUSH	3.25	406.25
8	40	8104789AAG1	BRUSHHOLDER	30.50	1,220.00
9	500	41A235897P4	BRUSH - T900	9.03	4,515.00
10	250	41A235676P5	BRUSH	9.09	2,272.50
11	125	8828400P1	BRUSH	5.70	712.50
12	12	2X4460	BRUSH/SET	13.40	160.80
13	25	149X1011	BRUSH ASM	16.90	422.50
14	63	998X90	BRUSH	2.10	132.30
			SUB-TOTAL		9,841.85
CONTACTOR TIPS					
15	10	8867977P1	CONTACT	4.96	49.60
16	35	9960190G2	CONTACT	17.90	626.50
17	8	9960190G7	CONTACT TIP	37.50	300.00
			SUB-TOTAL		976.10
TRUCKS					
18	30	41A201604P3	PLATE	120.00	3,600.00
19	240	41A200361P1	BRAKE SHOE	23.10	5,544.00
			SUB-TOTAL		9,144.00
LAMPS					
20	40	200PAR.30V	LAMP	10.10	404.00
21	40	25A17/RS	LAMP	2.81	112.40
22	60	41A210382P6	LAMP GE 44	1.51	90.60
			SUB-TOTAL		607.00
		TOTAL CONSUMABLE SPARES - 5 YEARS/LOCO			30,856.55

APPENDIX E
ITEM 1
CAPITAL SPARES

CAPITAL SPARES

11 TO 15 LOCOMOTIVES

PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
5GTA11C1	ALTERNATOR	$97,660.00	$ 97,660.00
5GY27L2	GENERATOR	10,910.00	10,910.00
5GY27M2	GENERATOR	10,910.00	10,910.00
17FM307A6	RECTIFIER	7,500.00	22,500.00
41C618369P6	EQUIP. BLOWER	14,550.00	14,550.00
41D704372P1	RADIATOR	22,040.00	88,160.00
5GY19A5	BLOWER MOTOR	13,530.00	27,060.00
[illegible]7473AAP1	AXLE	5,546.00	38,822.00
[illegible]TER	MTR/W/PIN	23,563.00	70,689.00
41C633819G1	MTR SP BRG	281.00	50,580.00
			$431,841.00

LOCOMOTIVE PROTECTIVE/MAINT. SPARES - 5 YRS - 15 LOCOMOTIVES
DIESEL ENGINE ARRANGEMENT

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
MAIN FRAME - TA8 91000					
CRANKSHAFT, GEAR & VIBRATION DAMPER					
1	1-	119X1096	Crank - V12	34880.00	34880.00
2	1-	135X1045-3	Gear-Crank	2290.00	2290.00
3	2-	119X1058	Key	17.50	35.00
4	2-	119X1062-1	Clamp Ring	350.00	700.00
5	2-	119X1006-3	Damper	2580.00	5160.00
			Sub Total		43065.00
MAIN FRAME & OIL PAN ASSEMBLY					
[illegible]	280	115X1905	O Ring	.19	53.20
[illegible]	20-	115X2050	O Ring	.18	3.60
[illegible]	20-	115X2611	D Seal 4.0	3.71	74.20
[illegible]	10-	115X1895-4	Gasket, Gov D	5.50	110.00
[illegible]	20-	115X2187	Gasket	.53	10.60
			Sub Total		251.60
MAIN BEARINGS					
11	105	114X1103-1	Main Bearing	125.37	13163.35
12	105	114X1150	Main Bearing-L	124.09	13029.45
13	30	114X1111-4	Lg Thrust	218.00	6540.00
			Sub Total		32733.30
CAMSHAFT, CROSSHEADS, GEAR & BEARINGS					
14	15-	116X1122-1	CAM-R-LF12	564.00	8460.00
15	15-	116X1123-1	CAM-L-LF12	564.00	8460.00
16	4-	116X1085-2	Shaft Stub	180.00	720.00
17	96-	116X1141	Cam Stud	3.64	349.44
18	192-	115X2393	Nut	.83	159.36
19	1-	135X1067	Cam Gear	2140.00	2140.00
20	4-	116X1047	Thrust Bearing	146.00	584.00
21	4-	116X1086	Ring	110.00	440.00
22	28-	116X1070-1	Cam Bearing	153.00	4284.00
23	23-	N22P29032B	Screw Cap	.41	11.48
24	28-	N402P15B	Washer Flat	.34	9.52
25	140-	115X1140	Stato-SL	.54	75.60
26	24-	124X1068	Crosshead	134.00	3216.00
27	24-	124X1072	Bearing	11.20	268.80
28	24-	124X1076-1	Roller	65.90	1581.60
29	24-	124X1077	Roller Pin	48.80	1171.20
30	36-	NS09[19188	Pin Roll	.19	6.84
31	12-	124X1058-1	Xhead-Lgfu	135.00	1620.00
32	12-	124X1062	Bearing	6.29	75.48
33	12-	124X1063-1	Roller	60.50	726.00

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
34	12-	124X1064	Pin/Dowel	48.80	585.60
35	12-	146X1083	Spring-Hd	12.30	147.60
	12-	124X1061	Retain-Spr	16.10	193.20
	36-	115X1045-3	O Ring	2.19	867.24
38	36-	115X1046	Dowel	.49	17.64
			Sub Total		36130.60
CRANKCASE PRESSURE SWITCH					
39	1-	41D713511P1	Switch	1240.00	1240.00
40	15-	1X6849	Diaph Assm	149.00	2235.00
41	120-	1X6860	Brush	5.74	688.80
42	15-	6S6DC-75V	Bulb	3.04	45.60
43	15-	1X6862	Spring	4.76	71.40
44	2-	1X6853	Connector	42.30	84.60
45	2-	1X6854	Gasket	1.44	2.88
46	2-	1X6855	Recept Asy	63.40	126.80
47	2-	1X6858	Plug & Cap	5.44	10.88
48	2-	1X6859	Socket	4.39	8.78
49	2-	140X1760	Ftg	15.00	30.00
			Sub Total		4544.74
GENERATOR END COVER					
50	15-	115X1843	Gasket	28.26	423.90
51	15-	115X1844	Gasket	13.86	207.90
52	390-	N405P75B	Washer Lock	.21	81.90
53	195	115X1021-1	Washer-Seal	.28	54.60
54	165	115X2393	Nut	.83	136.95
55	30	N170P29028B	Screw Sock	.41	12.30
			Sub Total		917.55
CRANKCASE INSPECTION COVER					
56	18	131X1005-4	Door-CC	125.00	2250.00
57	180	115X2363-1	O-Rg-CC Dr	2.45	441.00
58	180	115X1133-1	Seal-CC Dr	6.81	1225.80
59	180	115X2172	Roll Pin	.10	18.00
60	30	146X1002	Spring	15.00	450.00
61	30	115X1143	Washer-Spr	10.20	306.00
62	75	N22P23026B	Screw Cap	.71	53.25
63	75	41B560008P14	Locknut	.40	30.00
64	75	115X2174	Washer	1.04	78.00
			Sub Total		4852.05
FORWARD END COVER & AUX - TAB 92000 COVER/W LUBE OIL & WTR DRIVE					
65	15-	41A219499P138	O Ring	1.13	16.95
66	15-	115X2246-1	O Ring	2.14	32.10
67	15-	115X2075	Gask-Sd Cv	.94	14.10
68	15-	115X2420	O Ring	.50	7.50

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
69	15-	115X1925-1	Gasket-FEC	38.94	584.10
70	1-	135X1059-2	Gear	1100.00	1100.00
71	1-	119X1079-1	Hub	405.00	405.00
72	15-	114X1105-4	FE Coupling	509.00	7635.00
73	15-	115X1929	O Ring	1.84	27.60
74	15-	115X1930-3	Seal-Oil	26.60	399.00
75	15-	115X1931-1	Gask-Bearing	3.16	47.40
76	15-	115X1209	Gaskt-Mtg	2.98	44.70
	15-	115X1208	Gaskt-Dsgh	1.44	21.60
8	15-	115X1857	Gask-Elbow	1.06	15.90
79	1-	135X1048-1	Idler Gear	885.00	885.00
80	15-	115X1936	Gasket-Idler	1.41	21.15
81	15-	115X1917-1	Gasket	7.30	109.50
82	15-	131X1052	Seal-Cap	7.34	110.10
			Sub Total		11476.70
WATER PUMP & CONNECTION					
83	20	150X1070	Water Pump I	6.20	124.00
84	20	150X1069-1	Water Pump RB	236.00	4720.00
86	1-	125X1075-1	Impeller	460.00	460.00
87	1-	125X1078-2	Shaft W/Sp	543.00	543.00
88	1-	135X1030-1	Gear	406.00	406.00
			Sub Total		6253.00
LUBE OIL PUMP & MOUNTING					
90	12-	150X1139-1	LOP Install	23.80	285.60
91	6-	150X1143	Lub PM Reb	555.00	3330.00
92	1-	135X1046-1	Gear-Oil P	600.00	600.00
93	1-	139X1230	Dr Shaft	1700.00	1700.00
94	1-	130X1106	Key	8.89	8.89
95	1-	139X1231	Idler Shaft	1310.00	1310.00
96	110	139X1113	Nut	3.34	367.40
			Sub Total		7601.89
LUBE OIL RELIEF VALVE					
97	2-	139X1280	Valve-Rel	1050.00	2100.00
98	18-	115X1937	Gask-O Drn	2.06	37.08
99	15-	115X2246-1	O Ring	2.14	32.10
100	3-	145X1116	Spring	61.30	183.90
101	3-	146X1117	Spring	128.00	384.00
102	6-	123X1039	Keeper	.61	3.66
103	3-	139X1279	Retainer	56.90	170.70
104	3-	139X1278	Shim	4.10	12.30
105	15-	115X1021-1	Washer-Seal	.28	4.20
			Sub Total		2979.94
CRANKCASE BREATHER					
106	30-	115X1871	Gasket Housing	5.35	160.50
107	3-	140X1504	Filter	80.30	240.90

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
108	15-	115X1872-1	Gask-Filter	3.68	55.20
109	15-	115X1915	O Ring	.45	6.75
110	75-	N405P75B	Washer Lock	.21	15.75
111	75-	N22P29028	Screw Cap	.43	32.25
112	15-	115X1914-1	Gasket-Breather	.98	14.70
			Sub Total		526.05
POWER ASSEMBLY EQUIPMENT - TAB 93000					
113	7-	190X1034	Mast Pow A	9630.00	67410.00
114	7-	190X1035	Art Pow As	7830.00	54810.00
115	30-	121X1240	Weld As-Tf	2190.00	65700.00
116	120-	121X1126-3	Valve Guide	8.03	963.60
117	120-	123X1037-4	Valve Exh	120.00	14400.00
118	120-	123X1090	Valve-15 In	53.80	6456.00
119	120-	146X1082-1	Spring	21.30	2556.00
120	120-	123X1079-1	Spring Seat	1.35	162.00
121	600-	123X1001	Umbrella	1.98	1188.00
122	600-	123X1085	Rotator-Ex	14.30	8580.00
123	1200-	123X1039	Keeper	.61	732.00
124	15-	121X1120-1	Bushing	27.40	411.00
125	75-	121X1167-1	Retainer	2.46	184.50
126	30-	121X1177	O Ring-Grn	20.60	618.00
127	60-	121X1164-1	Seal .200	13.10	786.00
128	60-	121X1165-1	Seal .150	13.10	786.00
129	60-	121X1166-1	Seal .100	13.10	786.00
130	60-	121X1178	Seal	13.10	786.00
131	60-	121X1179	Seal	13.10	786.00
132	60-	121X1174	O Ring-Blk	9.88	592.80
133	3-	147X2226	Glycerine	185.00	555.00
134	180-	121X1077-1	Bolt	2.99	538.20
135	3-	147X1613	7.5 Lb Can	111.00	333.00
136	3-	121X1169	Plug Handle	19.70	59.10
137	3-	121X1163	Adapter	14.10	42.30
138	7-	147X1898-1	50 CC Botl	30.30	212.10
139	15-	115X1948	Copper Washer	.19	2.85
140	15-	115X2147-1	O Ring	.13	1.95
141	15-	121X1109	Stud-Nozzle	3.90	58.50
142	60-	N405P40B	Washer Lock	.20	12.00
143	7-	121X1127-1	Fuel Clamp	13.40	93.80
144	60-	N203P29B	Nut Hex	.14	8.40
145	450-	115X1021-1	Washer-Seal	.28	126.00
146	300-	121X1191-1	Wash-Locat	3.74	1683.00
147	300-	115X2460	Seal Washer	2.26	678.00
148	7-	121X1156-3	Cover W/Ga	155.00	1085.00
149	150-	121X1203	Seal-Cover	9.30	1395.00
150	7-	497A606P60	RTV/10.3OZ	8.00	56.00
151	7	121X1036-1	Handle-Cov	12.80	89.60
152	7	121X1037-5	Clamp-Cov	8.93	62.51
153	7-	115X2170	Stud-Cy Cv	1.09	7.63
154	60-	121X1045-3	Bolt Kit	34.60	2076.00
155	60-	115X1033-1	Gasket	.18	10.80

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
[illegible]	120-	N22P25012B13	Screw Cap	.15	18.00
157	120-	N405P113	Washer Lock	.25	30.00
158	30-	140X1826	HP Fuel Ln	68.80	2064.00
159	150-	150X1023-6	Cyl Am Kit	39.40	5910.00
160	15-	150X122	Cyl Asm-Eb	35.00	525.00
161	150-	150X1024-2	Cyl Install	33.30	4995.00
			Sub Total		251422.64

FUEL PUMP MOUNTING & LINKAGE

[illegible]	250-	115X2530-1	Bolt-12 Pt	2.50	625.00
[illegible]	45-	N22P290248	Screw Cap	.46	20.70
165	8-	132X1320-1	Lever-Fuel	111.00	888.00
166	8-	132X1321	Shft	35.00	280.00
167	8-	132X1093-2	Brg-Rd End	24.60	196.80
168	8-	132X1261	Brg-Rod End	9.81	78.48
169	8-	132X1323	Bushing	2.88	23.04
170	65-	247X16	Fitting	1.70	110.50
171	8-	146X1101	Spring	.66	5.28
172	16-	132X1493-1	Adj Nut	5.56	88.96
173	16-	140X2293-4	Banjo Ftg	50.00	800.00
174	300-	115X2445-1	O Ring	.66	198.00
175	16-	115X2444-1	Bolt-Fuel	26.80	428.80
176	150-	150X1096-1	Inj Pump-K	2.91	436.50
			Sub Total		4130.06

ROCKERS & PUSH RODS

177	12-	124X1070-2	Rocker-Exh	151.00	1812.00
178	12-	124X1075-3	Rocker-Inl	143.00	1716.00
179	12-	124X1080-2	Rocker B/C	100.00	1200.00
180	6-	124X1006	Spacer	7.54	45.24
181	6-	124X1007	Spacer	2.54	15.24
182	48-	124X1010-8	Tappet Screw	13.80	662.40
183	48-	115X2440	Nut-Jam	.54	25.92
184	12-	124X1030-7	Push Rod-X	19.90	238.80
185	18-	124X1031-7	Push Rod-L	25.60	460.80
186	12-	124X1013	P Rod-FP	21.30	255.60
187	12-	124X1014	T Rod-FP	23.60	283.20
188	12-	124X1032	Pin	5.08	60.96
189	12-	124X1015-3	Umbrella	8.00	96.00
190	12-	124X1025	Nut-Tappet	8.44	101.28
191	12-	124X1061	Retain-Spring	16.10	193.20
			Sub Total		7166.64

FUEL INJECTION NOZZLE

192	90-	123X1110	Inj-Lo Sac	238.75	21487.50
193	180-	123X1091	Dowel	2.97	534.60
194	90-	123X1092	Tran Block	21.29	1916.10
195	90-	123X1093	Thrust Cap	8.22	739.80
196	150-	123X1094	Shim .30mm	.90	135.00

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
197	150-	123X1101	Shim .41mm	.90	135.00
198	150-	123X1102	Shim .44mm	.90	135.00
199	150-	123X1103	Shim .47mm	.90	135.00
200	150-	123X1104	Shim .50mm	.90	135.00
201	150-	123X1105	Shim .53mm	.90	135.00
202	150-	123X1106	Shim .56mm	.90	135.00
203	150-	123X1107	Shim .59mm	.90	135.00
204	150-	123X1108	Shim .62mm	.80	120.00
205	150-	123X1109	Shim .65mm	.90	135.00
206	150-	123X1111	Shim .68mm	.90	135.00
207	150-	123X1112	Shim .98mm	.90	135.00
208	150-	123X1113	Shim .28mm	.90	135.00
209	150-	123X1114	Shim .58mm	.90	135.00
		123X1096	Spring-Ins	16.90	1521.00
211	30-	123X1097	Nozzle Nut	22.59	835.83
212	180-	123X1098	Tip/Del Valve	70.94	12769.20
213	180-	123X1052	Valve Assm	75.74	13633.20
			Sub Total		55312.23

FUEL INJECTION PUMP

214	60	132X1535	Pump-Bx-Db	729.00	43740.00
215	150	132X1291	Dowel	1.20	180.00
216	30-	132X1279	Holder	49.22	1476.60
217	150-	132X1538	Packang-Vl	3.92	588.00
218	150-	132X1539	Packing-Nt	5.00	750.00
219	60-	132X1283	Valve	101.55	6093.00
220	150-	146X1086	Spring-Val	5.91	886.50
221	30-	132X1284	Sleeve	28.30	849.00
222	60-	132X1540	Dl Vl Stop	19.44	1166.40
223	45-	132X1286	Rack Assem	44.47	2001.15
224	60-	132X1290	Screw	1.63	97.80
225	150-	132X1022	Shim	.38	57.00
226	150-	132X1023	Shim .016	.38	57.00
227	150-	132X1024	Shim	.34	51.00
228	150-	132X1025	Shim	.35	52.50
229	60-	132X1292	Screw	.34	20.40
230	60-	132X1541	Br/Plnger	250.22	15013.20
231	30-	132X1294	Sleeve	46.39	1391.70
232	30-	132X1295	Follower	55.43	1662.90
233	60-	146X1087-2	Pump Spring	31.58	1894.80
234	30-	132X1498	L Spring Pl	32.63	978.90
235	30-	132X1297	Pilot	30.40	912.00
236	30-	132X1298	Spring Plate	5.51	165.30
237	30-	132X1200	Plug Assem	28.69	860.70
238	60-	115X1964	Screw	.42	25.20
239	60-	115X1965	Washer	.38	22.80
			Sub Total		80993.85

PISTONS & RINGS

241	36-	142X1050	Piston-Brg	703.00	25308.00
242	36-	142X1043-3	Stl Crown	285.00	10260.00

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
243	72-	142X1034-1	Bolt-Stown	7.48	538.56
244	72-	115X2337	Washer	.89	64.08
245	18-	142X1035-1	Piston X-Hd	539.00	9702.00
246	3-	147X1143-1	17.6 Oz GN	34.50	103.50
247	180-	150X1190-1	Ring Kt-TF	65.20	11736.00
			Sub Total		57712.14
CONNECTING RODS					
248	12-	117X1060-1	Grvl Mas R	2080.00	24960.00
249	24-	117X1038	Bolt-R Cap	26.30	631.20
250	24-	117X1042	Washer	2.38	57.12
251	12-	117X1028-1	Bushing	568.00	6816.00
252	24-	N22P25016B	Screw Cap	.23	5.52
253	12-	117X1012-4	Art Rod	464.00	5568.00
254	12-	117X1029-4	Pin Art Rod	314.00	3768.00
255	24-	142X1052	Pin-Piston	328.00	7872.00
256	24-	117X1040	Bolt-P Pin	18.80	451.20
257	12-	117X1039	Bolt-A Pin	26.30	315.60
258	72-	117X1041-1	Spacer-Bolt	6.38	459.36
259	144-	117X1045-2	Bearing	166.38	23958.72
260	105-	117X1050-1	Bearing-Grooveless	164.34	17255.70
			Sub Total		92118.42
TURBOCHARGER & INTERCOOLERS - TAB 9400					
261	1-	126X1712	Turbo 1612	38625.00	38625.00
262	1-	126X1722	Rotor 1612	21380.00	21380.00
263			LEFT BLANK		
264	30-	115X2375	Gasket-Cover	1.41	50.76
265	300-	N405P113	Washer Lock	.25	75.00
266	180-	N405P17	Washer Lock	.23	34.50
267	15-	126X1222-1	TE Bearing	233.00	3495.00
268	15-	126X1562-1	Seal-TE	431.00	6465.00
269	15-	126X1223-1	BE Bearing	174.00	2610.00
270	15-	126X1563	Seal-BE	168.00	2520.00
271	75-	126X1642	Bolt-T1A	15.10	1132.50
272	300-	N405P75B	Washer Lock	.21	63.00
273	6-	497A806P33	Seal 30Z	6.75	40.50
274	6-	147X1640	H Tm Comp	12.30	73.80
275	3	147X2197	Lubricant	47.90	143.70
276	75-	126X1468	Bolt Seal	.69	51.75
277	3-	126X1613	Diffuser	1380.00	4140.00
278	1-	126X1649	Turb Inlet	9310.00	9310.00
279	7-	126X1389-1	Mag Pickup	735.00	5145.00
280	15-	150X1083-1	Turb Gasket	115.00	1725.00
			Sub Total		97080.51
INTERCOOLER & MOUNTING					
281	1-	128X1360-4	Intercooler-SM	5950.00	5950.00
282	1-	128X1361-4	Intercooler-LE	5950.00	5950.00

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
283	10-	150X1127	Intercooler	30.00	300.00
284	100-	N22P29020B13	Screw Cap	.43	43.00
285	100-	N402P45B	Washer Flat	.20	20.00
286	20-	150X1049-2	K-Intercooler	9.99	199.80
			Sub Total		12462.80

WATER DISCHARGE HEADER

287	36-	150X1116-1	Cyl Dresser	17.50	630.00
288	15-	115X2612	D Seal 5.0	6.24	93.60
289	15-	41A212792P1	Connection	175.00	2625.00
290	9-	41A212761P1	Ring	19.80	178.20
291	18-	499A910AGP14	Clamp	12.80	230.40
292	30-	N22P33048B13	Screw Cap	1.13	33.90
293	45-	N22P29020B13	Screw Cap	.43	19.35
294	30-	N22P290168	Screw Cap	.25	7.50
295	45-	N406P75S	Washer Lock	.21	9.45
			Sub Total		3827.40

MANIFOLD EQUIPMENT - TAB 95000
AIR INTAKE MANIFOLD

296	6-	128X1020-1	Body	81.50	489.00
297	50-	115X2093	Insert	1.58	79.00
298	5-	128X1021	Tube	27.40	137.00
299	6-	128X1023-1	Ring	11.90	71.40
300	50-	N22P29020B13	Screw Cap	.43	21.50
301	50-	N402P15B	Washer Flat	.34	17.00
302	50-	115X2025-1	Bolt-Nylok	.61	30.50
303	10-	115X2186	Stud	.99	9.90
304	25-	N258P29S	Nut Hex	.33	8.25
305	2-	128X1417-4	Air Elbow	641.00	1282.00
306	20-	N22P33028	Screw Cap	.41	8.20
307	20-	N406P17	Washer Lock	.23	4.60
			Sub Total		2158.35

EXHAUST MANIFOLD

308	3-	128X1443-7	Trans Sect	2310.00	6930.00
309	3-	128X1447	Ring-Ex Mf	141.00	423.00
310	75-	115X2158-1	Bolt-Turbo	3.75	281.25
311	150-	N406P45	Washer Lock	.20	30.00
312	6-	128X1353-4	Main Sect	1290.00	7740.00
313	36-	128X1357	Gasket-Main	2.99	107.64
314	36-	115X2164	Bolt-Clamp	14.50	522.00
315	150-	115X2167	Nut-Exh Mf	7.36	1104.00
316	9-	128X1354-1	Right Elbow	288.00	2592.00
317	9-	128X1355-1	Elbow	288.00	2592.00
318	36-	128X1358	Elbow Seal	55.00	1980.00
319	75-	115X2165-1	Bolt-Clamp	5.46	409.50
320	150-	115X2166	Nut-Exh Mf	1.94	291.00
321	75-	N22P33024B13	Bolt	.76	57.00

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
322	150-	N405P17	Washer Lock	.23	34.50
323	3-	147X1640	H Tm Comp	12.30	36.90
			Sub Total		25130.79

FUEL LINKAGE & GOV DRIVE - TAB 96000
GOVERNOR DRIVE

324	1-	114X1210-1	Gov Drive	4610.00	4610.00
325	30-	115X1877	Seal-Shaft	2.14	64.20
326	15-	136X1338	Gasket	.25	3.75
327	15-	115X2327	Gasket	.98	14.70
328	15-	115X1444	Oil Seal	5.59	83.85
329	30-	115X2322-2	O Ring	5.29	158.70
330	30-	N3400P406	Key	1.34	40.20
331	15-	146X1102	Spring	.66	9.90
332	2-	135X1044-3	Gear	228.00	456.00
333	2-	114X1131-1	Gear/Pinion	499.00	998.00
334	2-	115X2341	Nut	3.06	6.12
335	2-	N402P208	Washer Flat	.20	.40
336	2-	114X1132-1	Shaft-Horz	61.40	122.80
337	2-	135X1061-1	Gear-OS Dr	195.00	390.00
338	2-	114X1152-1	Gear	451.00	902.00
339	15-	114X1149-5	Shear Pin	10.80	162.00
340	15-	115X2378	Gasket Cover	.61	9.15
341	15-	115X2381	Gasket Cap	1.21	18.15
342	2-	+14c1153	Switch-Crk	13.60	27.20
343	2-	114X1156	Receptacle	136.00	272.00
344	15-	115X2382	Gasket-Recpt	.54	8.10
345	15-	115X2472	Fuel PM OR	3.00	45.00
346	15-	115X1896-4	Gasket, Gov D	5.50	82.50
347	5-	115X1245	Gasket Mtg	.75	11.25
348	30-	115X1232	Gasket Mtg	.30	9.00
349	15-	115X2323-1	Shim .003	.79	11.85
350	15-	115X2324-1	Shim .005	.79	11.85
351	15-	115X2325-1	Shim .0075	.79	11.85
352	15-	115X2326-1	Shim .020	.98	14.70
			Sub Total		8555.22

FUEL CONTROL LINKAGE

353	30-	115X1876-1	Bushing	1.84	55.20
354	30-	247X16	Fitting	1.70	51.00
355	60-	115X2432	Seal-Bush	1.75	105.00
356	30-	132X1093-2	Bearing-Rd End	23.80	714.00
357	150-	115X2393	Nut	.83	124.50
358	3-	146X1059-1	Spring-Rak	8.88	26.64
359	6-	136X1283	Collar	6.60	39.60
360	6	N177P2305	Screw Set	.68	4.08
361	6	N509P19248	Pin Roll	.55	3.30
			Sub Total		1123.32

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
OVERSPEED EXTENSION LINK					
362	1-	132X1620	Ext Link	265.00	265.00
363	15-	132X1308	Bushing	42.30	634.50
364	2-	132X1546	Spring	40.00	80.00
365	15	132X1093-2	Brg-Rd End	23.80	357.00
366	2-	150X1202	K-OS Link	1070.00	2140.00
			Sub Total		3476.50
OVERSPEED TRIP DEVICE					
367	2-	132X1530-3	Trip Device	690.00	1380.00
368	1-	132X1554-3	Actuator	431.00	431.00
369	15-	115X2436	O Ring	1.00	15.00
370	30-	132X1561	U Seal	10.00	300.00
371	45-	115X2434	O Ring	.75	33.75
			Sub Total		2159.75
OVERSPEED GOVERNOR					
372	2-	136X2254-2	OS Gov-Aut	1350.00	2700.00
373	20-	115X1413	Gasket	1.19	23.80
374	10-	136X1236	Thrust Brg	54.60	546.00
375	5-	136X2222	Ballhead A	164.00	820.00
376	20-	136X2067	Gasket	.41	8.20
377	5-	136X2223	Gear-Drive	107.00	535.00
378	5-	136X2322	Idler Gear	51.50	257.50
379	20-	115X1427	Gasket	2.88	57.60
380	5-	115X1232	Gask-Mtg	.30	1.50
381	20-	N22P230208	Screw Cap	.26	5.20
382	20	N405P72B13	Washer Lock	.28	5.60
			Sub Total		4960.40
ENGINE CONTROL GOVERNOR - TAB 97000					
383	2	136X2165-2	Governor	13890.00	27780.00
384	15	150X1136-1	Gov Basic	144.00	2160.00
385	7-	115X1245	Gasket-Mtg	.75	5.25
			Sub Total		29945.25
FUEL & LUBE OIL PIPING - TAB 98000 FUEL - LUBE OIL, WATER PIPING					
386	180	115X2420	O Ring	.51	91.80
387	42-	140X2289	Hose-Lg	21.00	882.00
388	3-	132X1595	Flow Indtr	150.00	450.00
389	6-	140X2386-1	Reg Valve	203.00	1218.00
390	15-	41B511684P13	Cartridge	91.30	1369.50
391	30-	2X6095	O Ring P13	2.08	62.40
392	30-	2X6183	O Ring P13	3.71	111.30
			Sub Total		4185.00

ITEM	QTY	PART NO.	PART NAME	UNIT PRICE	EXTENDED PRICE
FUEL BOOSTER PUMP & MOTOR					
393	1-	132X1420	Coupling	2260.00	2260.00
394	2-	41C610401G2	Coupling	72.90	145.80
395	2-	N3400P204	Key Woodrf	.55	1.10
396	12-	N22P250188	Screw Cap	.33	3.96
397	12-	N405P113	Washer Lock	.25	3.00
398	6-	N22P27016B13	Screw Cap	.40	2.40
399	6-	N405P448	Washer Lock	.20	1.20
400	1-	132X1415-1	Rotor	136.00	136.00
401	15-	132X1408	O Ring	2.71	40.65
402	15-	132X1407	Seal Assem	29.50	442.50
403	18	1X7804	Bolt	1.24	22.32
404	6	N44P161758	Screw Mach	26.00	156.00
405	12	149X1017	Washer	2.09	25.08
406	150-	149X1011	Brush Asm	16.90	2535.00
407	15-	149X1022	Brush Hold	61.30	919.50
408	15	149X1023	Wash-Br Hl	1.48	22.20
409	7-	149X1024	Brusk Pl K	18.00	126.00
410	15-	149X1029	Ball Bearing	12.00	180.00
411	15-	149X1043	Seal Snaft	14.90	223.50
412	15-	149X1044	Spring Washer	1.13	16.95
413	15-	149X1045	Key	1.71	25.65
414	2-	149X1047	Armature	1240.00	2480.00
415	2-	132X1410-3	Fuel Trs P	215.00	430.00
416	1-	149X1014	Motor	1880.00	1880.00
			Sub Total		12078.81
			TOTAL THIS SECTION		907382.10

APPENDIX E
ITEM 1
PROTECTIVE SPARES
MECH. & ELECT.EQUIP.

LOCOMOTIVE PROTECTIVE/MAINT. SPARES - 5 YRS
15 LOCOMOTIVES
MECHANICAL & ELECTRICAL EQUIPMENT

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
NOSE CAB - TAB 10000					
1	4 -	41A282012P4	HINGE	11.40	45.60
2	4	425C226G1	LATCH	34.55	138.20
3	4	41A200120P11	SHIM	1.15	4.60
4	18 -	N22P250168	SCREW CAP	.23	4.14
5	10	41A201925P1	SEAL	2.18	21.80
6	10	188V782P1	SPRING	7.14	71.40
7	20	8829217P2	GASKET	3.56	71.20
			SUB-TOTAL		356.94
CLASSIFICATION LIGHT					
8	6	41A205337P1	MARKER LITE	40.50	243.00
9	6	41A205337P2	MARK LIGHT	40.50	243.00
10	9	1X7845	SOCKET	11.30	101.70
11	15	1X7763	LENS RED	14.90	223.50
12	15	1X7844	WHITE LENS	14.50	217.50
13	30 -	1X7843	GASKET	3.24	97.20
14	60	GE30S11/DC-75V	LAMP	3.79	227.40
			SUB-TOTAL		1,353.30
OPERATOR CAB - TAB 11000					
15	6 -	41A304161P2	DOOR GLASS	240.00	1440.00
16	4	41A244111AAG4	GLASS	430.00	1720.00
17	2	41A244111AAG5	GLASS	424.00	848.00
18	4 -	418542891P1	STRIP	44.90	179.60
19	4	491A281P11	STRIP	33.00	132.00
20	10 -	41A212909P1	SEAL/921N	19.00	190.00
21	80 -	41A212909P2	STRIP/FT	1.24	99.20
22	2	499A386P1	CATCH	73.40	146.80
23	4	156B1888AEP44	GASKET	1.15	4.60
24	4	156B1888AEP98	GASKET	1.15	4.60
			SUB-TOTAL		4764.80

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
OPERATORS CAB ACCESSORIES					
25	4	41B503675G3	ARM REST	35.40	141.60
26	1	41A204929P1	HORN	2550.00	2550.00
27	2	8836572P23	GASKET	3.25	6.50
28	4	8861307ACP4	SUN VISOR	65.30	261.20
29	4	41C610665G1	LOUVER	34.80	139.20
			SUB-TOTAL		3098.50
DOME LIGHT					
30	6	1X7784	BODY	29.80	178.80
31	9	1X7845	SOCKET	11.30	101.70
32	15	1X7844	WHITE LENS	14.50	217.50
33	30	1X7843	GASKET	3.24	97.20
34	30 -	GE20S11/DC-75V	LAMP	3.79	113.70
35	6	497A911G1	SWITCH	12.80	76.80
			SUB-TOTAL		785.70
HEADLIGHT ARRANGEMENT					
36	180	200PAR 30V	LAMP	10.10	1818.00
37	10-	41D700038G3	INSERT RING	26.80	268.00
38	6	41D700038G2	MOUNTING	36.80	220.80
39	30	6720098P1	SPRING	1.55	46.50
40	75	N402P11B	WASHER FLT	.19	14.25
41	75	41A260076P1	LOCK NUT	.46	34.50
			SUB-TOTAL		2,402.05
DOOR LATCH					
42	4 -	425C226G2	DOOR LATCH	23.10	92.40
43	4 -	335B572G2.	CUP	10.10	40.40
44	12 -	41B560008P9	LOCKNUT	.68	8.16
45	4	41C604640G3	LATCH	122.00	488.00
			SUB-TOTAL		628.96
FOOT SWITCH ARRANGEMENT					
46	4	499A936AAP3	SWITCH	80.00	320.00
47	10	N70P1514B	SCREW SET	.28	2.80
48	10 -	N210P15B	NUT HEX	.21	2.10
49	20 -	975X5	SWITCH	22.30	446.00
50	4	499A132P104	HOSE	9.10	36.40
51	16	41A211883P3	CLAMP	2.23	35.68
			SUB-TOTAL		842.98

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
CREW LOCKER & HOT PLATE ARRG.					
52	6 -	41A203971P1	HOT PLATE	606.00	3636.00
53	9	41C623354G1	SWITCH ASM	136.00	1224.00
54	3 -	41A212414P1	CRK BREAKER	47.50	142.50
			SUB-TOTAL		5002.50
SLIDING WINDOW ARRGT.					
55	6 -	2X3948	LATCH	30.50	183.00
56	6 -	2X3949	CATCH	36.30	217.80
			SUB-TOTAL		400.80
WINDOW WIPER ARRGT.					
57	4	41A203148P6	MOTOR	130.00	520.00
58	3	41A203148P4	MOTOR	123.00	369.00
59	3	41A203148P2	MOTOR	135.00	405.00
60	15	41A204660P3	ARM	89.90	1348.50
61	24	41A204660P4	ARM	89.90	2157.60
62	180	41A203147P5	BLADE	10.60	1908.00
63	15	497A803P9	HOSE	5.33	79.95
			SUB-TOTAL		6788.05
SWITCH PANEL ARRGT.					
64	4	497A911P1	SWITCH	9.81	39.24
65	3	41A203655P2	SWITCH	118.00	354.00
66	3	CR2940UA203B	SWITCH	72.30	216.90
67	4	41A212197P1	SWITCH	213.00	852.00
68	6	41B515348P2	CIR BRKR	136.00	816.00
69	6	41A218841P5	BREAKER	68.10	408.60
70	3	41A218842P4	BREAKER	284.00	852.00
71	6	41A218841P4	BREAKER	145.00	870.00
72	4	41A218841P6	BREAKER	91.80	367.20
73	6	41B517782ABP31	CIR BREAKER	69.80	418.80
74	6	41A218842P7	CIR BREAKER	528.00	3168.00
75	6	41A218841P8	CIR BREAKER	85.50	513.00
76	18	41A216941P1	IND LIGHT	.55	9.90
77	18	41A216940P1	LOCK RING	.98	17.64
78	30	41A304446P1	HOLDER	1.13	33.90
79	90	41A210382P6	LAMP GE 44	1.51	135.90
80	6	A700DM	AMMETER	170.00	1020.00
			SUB-TOTAL		10,093.08

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
...NTROL CONSOLE ARRGT.					
81	3	A707EF	AMMETER	226.00	678.00
82	3	497A364P1	BUZZER	159.00	477.00
83	3	41A304311P3	BELL	113.00	339.00
84	3	497A365P10	BELL	200.00	600.00
85	3	41B517782AAP4	BREAKER	17.60	52.80
86	12	41B564808G1	DIODE ASM	20.00	240.00
87	6	41A281017P25	DIODE	15.90	95.40
88	30	41A216737P1	LAMPHOLDER	1.63	48.90
89	3	341B189G13	PANEL	136.00	408.00
90	3	341B189G12	PANEL	143.00	429.00
91	3	41B563171G19	TIMING MOD	65.00	195.00
92	3	41B563171G30	TIMING MOD	65.00	195.00
93	6	41B560270P4	RELAY	72.40	434.40
94	3	488A353ADP8	RHEOSTAT	46.30	138.90
95	3	CR2940UB203B	SWITCH	78.30	234.90
96	7	497A911P1	SWITCH	9.81	68.67
97	3	41A267319P2	SIGNAL	55.10	165.30
98	3	41A245459ABP1	GAGE	40.50	121.50
99	3	41A245459AAP1	GAGE	40.50	121.50
100	3	41A245457P1	GAGE	40.50	121.50
101	3	41B511153P1	VALVE	211.00	633.00
			SUB-TOTAL		5797.77
CONTROLLER					
102	3	41B557247G1	HANDLE	11.70	35.10
103	3	41C656037P1	INDICATOR	41.10	123.30
104	15	41A264757G2	SCREW	1.36	20.40
105	15	41A264757G3	SCREW	1.64	24.60
106	3	41C656037P3	INDICATOR	5.38	16.14
107	45	482A768G1	CONTACT	4.85	218.25
108	45	41A264589G1	FINGER	43.60	1962.00
109	45	N44P16020B	SCREW MACH	.14	6.30
110	45	N44P16012B	SCREW MACH	.25	11.25
111	3	482A444APP20	RESISTOR	5.00	15.00
112	21	6700549G1	CONTACT	9.56	200.76
113	3	41B557209P1	RHEOSTAT	350.00	1050.00
114	12	278A888G1	BRUSH	18.60	223.20
115	3	2418870P1	SPRING	6.53	19.59
			SUB-TOTAL		3940.23

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
ENGINE CAB - TAB 15000					
BRAKING RESISTOR					
116	27	17EA20A131	RES/GRID	710.00	19,170.00
117	27	17EA20A19	RES/GRID	710.00	19,170.00
118	36	41A218054P1	INSULATOR	15.80	568.80
			SUB-TOTAL		38,908.80
BLOWER MTR					
121	12	41A231381G1	MOUNTING	59.80	717.60
122	6	302702P2	BUSHING	2.31	13.86
123	3	8828752P1	CAP	84.40	253.20
124	15	N51P16010B	SCREW MACH	.25	3.75
125	3	6727190P1	PLATE	34.40	103.20
126	3	8828748P2	CAP	90.80	272.40
127	15	6717749P1	GASKET	.86	12.90
128	21	N22P23016B	SCREW CAP	.25	5.25
129	21	N405P42P	WASHER LOCK	.56	11.76
130	15	8864950P81	BALL BRG	29.40	441.00
131	15	6704604P1	FLINGER	27.50	412.50
132	15	4701852P1	NUT	14.00	210.00
133	15	6704451P1	WASHER	1.14	17.10
134	24	41B530658G1	BRUSHHOLDER	36.06	865.44
135	12	6727544G1	STRAP	4.50	54.00
136	6	8820297P10	SUPPORT	25.80	154.80
137	24	481A899P1	BOLT/WASHER	.44	10.56
138	12	41A232345P9	LOCK NUT	1.35	16.20
139	60	6727520P1	BRUSH	3.25	195.00
140	1	41D730436G1	FAN	451.00	451.00
141	3	6717753P1	NUT	18.60	55.80
142	3	N503P1240B	PIN COTTER	.21	.63
			SUB-TOTAL		4,277.95
ENGINE CAB					
143	8	41C604640G3	LATCH	122.00	976.00
144	10	425C226G1	LATCH	34.55	345.50
145	20	41A282012P2	HINGE	10.60	212.00
146	5	41A282012P4	HINGE	11.40	57.00
147	50	N22P29024B	SCREW CAP	.46	23.00
148	50	N258P29B	NUT HEX	.33	16.50
149	50	N405P45B	WASHER LOCK	.21	10.50
150	50	N22P25016B13	SCREW -8	.25	12.50
151	50	N405P43P	WASHER LOCK	.05	2.50
152	6	425C226G13	LATCH	56.10	336.60
153	6	41A210596P2	HINGE	8.15	48.90
154	2	41B515714G4	SHAFT	3090.00	6180.00
			SUB-TOTAL		8,221.00

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
BLOWER & DRIVE ARRGT.					
156	6	N22P35032	SCREW CAP	1.29	7.74
157	6	N402P18B13	WASHER FLT	.19	1.14
158	6	N405P48B	WASHER LCK	.20	1.20
159	1 -	147X1143-1	17.6 OZ GN	34.50	34.50
160	3	9952133P3	DOWEL PIN	17.60	52.80
161	3	156B1888FTP190	SEAL	3.50	10.50
162	3	156B1888ETP304	SEAL	6.31	18.93
163	1 -	499A411P2	SEALR/12OZ	3.20	3.20
164	1	41B519676P2	DRIVE SHFT	2560.00	2560.00
165	2	41C618604P	HUB	453.00	906.00
166	2	41C618604P1	HUB	463.00	926.00
167	9	41E901373G2	AIR CLEANER	93.80	844.20
168	25	156B1888DTP131	GASKET	1.50	37.50
169	12	156B1888DGP400	GASKET	1.50	18.00
170	6	156B1888DGP325	GASKET	1.39	8.34
171	15	1X9935	FELT	4.95	74.25
172	15	1X9936	WASHER	.75	11.25
173	24	2X4277	BOLT	3.83	91.92
174	60	2X4278	NUTS/16-18	6.48	388.80
175	30	2X4279	WASHER	9.65	289.50
			SUB-TOTAL		6,240
PILLOW BLOCK					
176	2 -	41A288380P2	PILLOW BLK	443.00	886.00
177	2 -	41A288380P3	PILLOW BLK	609.00	1218.00
178	2	41A288380P12	CARRIER	68.10	136.20
179	2	41A288380P14	ADAPTER	16.30	32.60
180	2	41A288380P13	CARRIER	96.10	192.20
181	2	41A288380P15	ADAPTER	45.40	90.80
182	4 -	41A288380P7	BEARING	211.00	844.00
			SUB-TOTAL		3,399.80
RECTIFIER PANEL ARRGT.					
183	3 -	17FM498A1	PANEL	10,250.00	30,750.00
184	36 -	41A296321AAP1	FUSE	230.00	8,280.00
185	12 -	41A296304AMP1	DIODE	180.00	2,160.00
186	12 -	41A296304AMP2	DIODE	270.00	3,240.00
187	8	41A271200P2	CATCH	2.95	23.60
			SUB-TOTAL		44,453.60
RESISTOR PANEL					
188	2	41B561936G1	PANEL	526.00	1,052.00
			SUB-TOTAL		1,052.00

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
LUBE OIL & WATER PIPING					
189	18	499A912AEP5	GASKET	3.38	60.84
190	30	491A317P11	GASKET	3.88	116.40
191	15	491A318P25	GASKET	4.41	66.15
192	15	491A318P14	GASKET	2.93	43.95
193	4	499A924AEP7	VALVE	73.80	295.20
194	30	499A912AEP10	GASKET	6.93	207.90
195	15	41A212792P1	CONNECTION	175.00	2625.00
196	6	41A212761P1	RING	19.80	118.80
197	12	499A910AGP14	CLAMP	12.80	153.60
198	60	499A912AEP13	GASKET	11.30	678.00
199	15	499A912AEP12	GASKET	11.20	168.00
200	30	499A912ADP5	GASKET	9.84	295.20
201	15	499A912ADP4	GASKET	5.20	78.00
202	15	491A316P1	GASKET	4.08	61.20
203	30	499A477P1	HOSE	27.60	828.00
204	3	41A205302P1	THERMOMETER	81.00	243.00
205	15	339B949P22	SWITCH/170	228.00	3,420.00
206	15	339B949P214	SWITCH	177.50	2,662.50
			SUB-TOTAL		12,121.74
LUBE COOLER					
207	1	41D723215G1	CORE 161N	2,440.00	2,440.00
208	30 -	41A212065P1	PACK RING	12.90	387.00
209	15 -	418510831P1	RING	161.00	2,415.00
210	30 -	41A212125P1	GASKET	7.11	213.30
212	1	41D718899G1	LO COOLER	15,530.00	15,530.00
213	1	41D718873G3	OIL FILTER	7,980.00	7,980.00
			SUB-TOTAL		28,965.30
LUBE OIL FILTER					
214	30 -	41A211048P7	GASKET	18.50	555.00
215	1 -	497A806P57	CEMENT/GAL	61.60	61.60
			SUB-TOTAL		616.60
RADIATOR CAB					
216	5	425C226G1	LATCH	34.55	172.75
217	1 -	497A806P57	CEMENT/GAL	61.60	61.60
218	4	188V782P1	SPRING	7.14	28.56
219	4	41A201925P1	SEAL	2.18	8.72
220	2 -	499A452P2	GAUGE	48.60	97.20
			SUB-TOTAL		368.83

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
RADIATOR CAB ACCESSORIES					
221	12 -	41A212504P1	CAP	66.50	798.00
222	2 -	499A452P2	GAUGE	48.60	97.20
232	2 -	41A216586P1	VALVE	145.00	290.00
224	7	418564808G1	DIODE ASM	20.00	140.00
			SUB-TOTAL		1,325.20
RADIATOR & SHUTTER ARRGT.					
225	4	2X1130	CORE	4,700.00	18,800.00
226	20 -	1X5118	GASKET	31.00	620.00
227	12 -	497A803P1	HOSE	12.20	146.40
228	2 -	189V113P1	BREATHER	29.50	59.00
			SUB-TOTAL		19,625.40
ENGINE AIR INTAKE ARRGT.					
229	12	41A244997P1	V BELT	39.00	468.00
230	4	41A243793P2	DUCT	35.50	142.00
231	9	41A301309P33	CLAMP	11.30	101.70
232	2	41A241257P5	HOSE	40.50	81.00
233	10 -	41A202118P1	AIR DUCT	98.60	986.00
234	20 -	41A210603P9	CLAMP	24.40	488.00
235	10 -	41A213495P1	GASK-AIRIN	7.64	76.40
236	2 -	41B512741P1	SWITCH	191.00	382.00
			SUB-TOTAL		2,725.10
EXHAUSTER					
237	1	41B519090P2	EXHAUSTER	1,990.00	1,990.00
238	1	2X3853	WHEEL	708.00	708.00
239	4 -	2X3855	BEARING	411.00	1,644.00
			SUB-TOTAL		4,342.00
CLUTCH GEAR UNIT					
240	15	9961008G1	BRUSHHOLDER	55.00	825.00
241	60	998X90	BRUSH	2.10	126.00
242	2 -	8864951P82	ROLLER BRG	128.00	256.00
243	4 -	8864950P102	BALL BRG	264.00	1,056.00
244	3	2387506P1	GASKET	.45	1.35
245	3	497A706P18	GREASE FIT	2.35	7.05
246	15	8805484P1	GASKET	.86	12.90
247	15	497A806P60	RTV/10.3OZ	8.00	120.00
248	2 -	8864952P87	BALL BRG	280.00	560.00
249	3	41A235580P1	WASHER	3.43	10.29

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
250	3	41A235578P1	COLLAR	54.00	162.00
251	3	41A235577P1	FLINGER	33.30	99.90
252	2	41B535761P1	CARRIER	958.00	1,916.00
253	3	41C632208P1	CARRIER	340.00	1,020.00
254	3	8864951P63	ROLLER BRG	340.00	1,020.00
255	3	8364953P87	ROLLER BRG	87.10	261.30
256	2 -	1X7281	GR/PINION	1,010.00	2,020.00
257	1 -	41C635716P1	SHAFT	791.00	791.00
258	1	41B532610P1	SHAFT	404.00	404.00
259	3 -	8864953P51	ROLLER BRG	82.10	246.30
			SUB-TOTAL		10,915.09

A/C & RADIATOR FAN ARRGT.

260	1	41B504585P4	COUPLING	1,280.00	1,280.00
261	3	41B505278P2	COUPLING	1,380.00	4,140.00
262	3	41B532612G2	COUPLING	1,500.00	4,500.00
263	150	41A302690G1	COUPLING	35.60	5,340.00
			SUB-TOTAL		15,260.00

MAGNET VALVE ARRGT.

264	2 -	41A212361P5	VALVE	255.00	510.00
265	2 -	17ME1A24	VALVE EQP	708.00	1,416.00
266	2 -	17ME1A20	VALVE EQP	619.00	1,238.00
267	2 -	41B5100557P15	SWITCH	278.00	556.00
			SUB-TOTAL		3,720.00

PLATFORM PARTS - TAB 17000
PLATFORM

268	6	41A303938ABP54	HOSE	38.80	232.80
269	6	41A303938ABP62	HOSE	44.20	265.20
270	12	41A303938ABP15	HOSE	14.30	171.60
271	12	41A303938ABP33	HOSE	11.30	135.60
272	72	499A910AAP3	HOSE CLAMP	1.56	112.32
273	3	8866488AGP8	HOSE	18.00	54.00
274	12	499A910ABP10	CLAMP	5.66	67.92
275	6	CR2940UA202B	SWITCH	35.10	210.60
276	6	41A211570P1	DUST CAP	11.90	71.40
			SUB-TOTAL		1,321.44

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
FUEL TANK ARRGT.					
277	4	41A210336G1	FUEL GAGE	133.00	532.00
278	2 -	41A211045G1	FUEL GAGE	173.00	346.00
			SUB-TOTAL		878.00
AIR DUCT END MOTOR					
279	18	41B500680P1	FLEX CONN	100.00	1,800.00
			SUB-TOTAL		1,800.00
AIR DUCT MID MOTOR					
280	9	8836855P1	CONNECTION	51.00	459.00
281	9	3398783P1	CONNECTION	51.90	467.10
			SUB-TOTAL		926.10
CAB HEATER					
282	2	2X4458	HEATER	72.60	145.20
283	2 -	2X4459	MOTOR	510.00	1,020.00
284	60	2X4460	BRUSH/SET	13.40	804.00
285	2 -	2X4473	SWITCH	260.00	520.00
286	1	2X4464	TEMP CNTRL	61.90	61.90
287	1	2X4465	TEMP CNTRL	27.00	27.00
288	4	2X4467	DIODE ASM	78.90	315.60
289	2 -	2X4468	CIRC BRKER	304.00	608.00
			SUB-TOTAL		3,501.70
AIR BRAKE - TAB 20000 AIR BRAKE EQUIPMENT					
290	4	41A205210P1	HOSE/FTGS	37.10	148.40
			SUB-TOTAL		148.40
FILTER, 41A215087P4/MAIN RES.					
291	30	1X6383	FILTER	19.80	594.00
292	30	1X6385	SEAL	9.83	294.90
			SUB-TOTAL		888.90

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
SAND TRAP					
293	8	41A201465P1	SAND TRAP	55.00	440.00
			SUB-TOTAL		440.00
VENT VALVE					
294	2	566403	VENT VALVE	273.00	546.00
295	15	578886	KIT	7.35	110.25
			SUB-TOTAL		656.25
RELAY VALVE					
296	2	499A924BEP1	VALVE	740.00	1,480.00
297	15	560728	GSKT KIT	22.75	341.25
			SUB-TOTAL		1,821.25
DRAIN VALVE - 41A201966P1					
296	2	551116	VALVE	245.00	490.00
			SUB-TOTAL		490.00
SAFETY VALVE - 499A924CCP7					
299	2	542790-0150	VALVE	375.00	750.00
			SUB-TOTAL		750.00
BRAKE CYLINDERS					
300	8 -	93841	FTG GASKET	.27	2.16
			SUB-TOTAL		2.16
PRESSURE SWITCHES					
301	3 -	418510557P15	SWITCH	278.00	834.00
302	6	418510557P1	SWITCH	296.00	1,776.00
303	3 -	418510557P4	SWITCH	278.00	834.00
			SUB-TOTAL		3,444.00

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
AIR COMPRESSOR PARTS LIST LATER EST. PRICE					
	1	LATER	ESTIMATE	41,800.00	41,800.00
			SUB-TOTAL		41,800.00
305	2 -	17MM24AF1	AXLE ALT	1,060.00	2,120.00
			SUB-TOTAL		2,120.00
BOLSTER AND FRAME					
306	36	41B515393P3	WEAR PLATE	23.00	828.00
307	72	41A201604P3	PLATE	120.00	8,640.00
308	72	N22P35128	SCREW CAP	14.10	1,015.20
309	72	41B560008P23	LOCKNUT	1.68	120.96
310	54	499A913AAP5	BUSHING	2.70	145.80
311	54	499A913AAP6	BUSHING	3.53	190.62
312	18	41A204772P1	BAR TIE	119.00	2,142.00
313	36	495A599G4	BOLT	19.40	698.40
314	18	41A244359P1	WEAR PLATE	22.60	406.80
315	6	156B1001AEP12	PIN	1.13	6.78
316	12	339B911G1	STOP	23.00	276.00
317	18	339B911G2	STOP	26.00	468.00
318	12	41A210384P125	FELT SEAL	2.28	27.36
319	6	339B785P2	LINER	448.00	2,688.00
320	6	339B785P3	PLATE	32.00	192.00
321	3	41A244371ABP1	WEAR PLATE	26.10	78.30
322	12	499A114P2	OIL CUP	28.10	337.20
			SUB-TOTAL		18,261.42
BRAKE RIGGING					
323	18	1805318P4	PIN	22.00	396.00
324	9	495A746P6	PIN	25.60	230.40
325	4	495A746P1	PIN	17.40	69.60
326	9	41A241271P2	PIN	9.64	86.76
327	9	41A241271P3	PIN	9.64	86.76
328	36	497A738P5	WASHER	1.43	51.48
329	9	495A806P11	PIN	49.00	441.00
330	9	41A240557P1	BOLT	15.80	142.20
331	9	495A737P8	PIN	20.40	183.60
332	9	495A737P9	BOLT	38.30	344.70
333	36	41C614885G1	HD W/BUSH	323.00	11,628.00
334	360	8821026P1	KEY	7.40	2,664.00
			SUB-TOTAL		16,325.50

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
GEAR CASE					
335	3 -	41D730230G3	GEAR CAST	1,230.00	3,690.00
336	10	8855703P14	SEAL	1.64	29.52
337	18	8843557P8	RING	14.90	268.20
338	36	9961547G2	SEAL	6.39	230.04
339	9	8843557P1	RING	144.00	1,296.00
340	9	8843557P2	RING	88.00	792.00
341	9	8843557P7	RING	105.00	945.00
342	9	8843557P10	RING	69.00	621.00
343	36	N509P914B	PIN ROLL	.21	7.56
344	18	41B535376P2	GASKET	1.24	22.32
345	36	6704771P1	BOLT	9.80	352.80
346	36	N402P52B	WASHER FLT	.20	7.20
347	36	N203P45B13	NUT HEX	2.36	84.96
348	36	186V285	BOLT	12.80	460.80
349	36	189V673P1	WASHER	1.34	48.24
			SUB-TOTAL		8,855.64
JRNL. BRG.					
350	6	41A204095G4	BEARING	838.00	5,028.00
351	3	41B510216G2	SUSPENSION	605.00	1,815.00
352	9	479A325G2	SUPPORT	164.00	1,476.00
353	9	41B510214P1	MOUNT	115.00	1,035.00
354	12	8815946	PIN	62.40	748.80
			SUB-TOTAL		10,102.80
SNUBBERS					
355	8 -	41A244100AAP6	SNUBBER	275.00	2,200.00
356	8 -	41A244100AAP2	SNUBBER	359.00	2,872.00
			SUB-TOTAL		5,072.00
SPRING RIGGING					
357	24	41B504932G1	SPRING	293.00	7,032.00
358	8 -	388D240P5	RBR MOUNT	458.00	3,664.00
359	8 -	388D240P2	MOUNT	1,430.00	11,440.00
			SUB-TOTAL		22,136.00

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
WHL/AXLE/GEAR					
360	2 -	8837756P1	GEAR	3,218.75	6,437.50
			SUB-TOTAL		6,437.50
TRACTION MTR, 5GE761A19					
361	10	8864951P148	ROLLER BRG	343.75	3,437.50
362	10	8864950P169	BALL BRG	85.00	850.00
363	10	8819143	GASKET	2.53	25.30
365	54	41A235897P4	BRUSH-T900	17.23	930.42
366	14	9961549P2	GASKET	1.14	15.96
367	14	9961549P3	GASKET	.98	13.72
368	1 -	497A806P57	CEMENT/GAL	61.60	61.60
369	3	9961549G1	COVER	7.28	21.84
370	3	8843545G5	COVER	25.10	75.30
371	7	6726816G1	LEVER	4.63	32.41
372	30	1X9888	GASKET SET	6.79	203.70
373	14	9949062P3	GASKET	.38	5.32
374	14	9949062P4	GASKET	.38	5.32
375	2 -	41A238864G1	PUTTY 1 QT.	11.10	22.20
376	54 -	41C63396G2	B HOLDER	165.00	8,910.00
377	30 -	41A238534P1	OIL FILLER	4.88	146.40
			SUB-TOTAL		14,756.63
TRACTION MOTOR ACCESSORIES					
378	18	41B535723G1	DUST GUARD	18.50	333.00
379	18	41C630516G1	LUBRICATOR	59.75	1,075.50
380	180	494A549P1	WICK	39.00	7,020.00
381	18 -	41C630516G2	CARRIER	20.80	374.40
382	180 -	41A230387P1	GASKET	1.43	257.40
383	9 -	41C635677P1	PINION	663.00	5,967.00
384	36 -	41C633819G1	MTR SP BRG	281.00	10,116.00
385	9 -	41B537105G1	SPEED SENS	840.00	7,560.00
386	9 -	41A219499P16	O RING	.48	4.32
			SUB-TOTAL		32,707.62

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
ALTERNATOR & AUX. EQUIP. - TAB 40000					
ALTERNATOR - 5GTA11C1					
387	6	1X8670	GASKET KIT	4.08	24.48
388	40	115X1146	O RING	.23	9.20
389	40	41A237943P1	GASKET	.65	26.00
390	2 -	8805493P1	GASKET	11.70	23.40
391	24	8805499P1	SCREW	1.79	48.33
392	1 -	41C633061P1	GEAR-102T	1,187.50	1,187.50
393	4 -	41C632663P1	PINION	302.50	1,210.00
394	2 -	41C635625P1	PINION	304.00	608.00
395	2 -	41C635232G3	IDLER GEAR	343.75	687.50
396	2 -	8864952P48	BALL BRG	29.90	59.80
397	2	41A231192P1	RETAIN RNG	45.80	91.60
398	8	41A230912P3	BOLT	1.70	13.60
399	6 -	41A231050P4	BOLT	.75	4.50
400	6 -	41A231050P2	BOLT	.75	4.50
401	15 -	41B537660P1	WASHER	.29	4.35
402	2	41A219499P332	O RING	1.01	2.02
403	30	8805492P1	GASKET	4.69	140.70
404	2 -	8864951P166	BEARING, PE	475.00	950.00
405	2 -	41A231141P1	RET RING	79.80	159.60
406	18	8805478P1	SCREW	1.79	32.22
407	2 -	41A233800P1	SEAL RING	225.00	450.00
408	4 -	41A233819P2	SEAL	4.44	17.76
409	4 -	41A235260P1	INSULATOR	6.41	25.64
410	24 -	41B531649G2	BRUSH HLDR	42.40	1,144.80
			SUB-TOTAL		5,925.50
GEAR UNIT - 7GA29C1					
411	1 -	7GA29C1	GEAR UNIT	1,940.00	1,940.00
412	1 -	493A398P1	BRG-CAP	65.90	65.90
413	2 -	8864950P135	BALL BRG	76.10	152.20
414	2 -	8864951P63	ROLLER BRG	340.00	680.00
415	2 -	494A201P1	SPACER	118.00	236.00
416	15	41A237287P3	PACKING	3.55	53.25
417	15	189V405P1	SLEEVE	11.80	177.00
			SUB-TOTAL		3,304.35
AUX. GENERATOR - 5GY27L1/M1					
418	4 -	8864951P29	ROLLER BRG	70.00	280.00
419	4 -	8864950P81	BALL BRG	29.40	117.60
420	25	8804066P1	GASKET	.64	16.00
421	27	41B530658G1	BRUSH HLDR	36.06	973.62
422	15	8820297P1	STUD	26.40	396.00
			SUB-TOTAL		1,783.22

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
LOWER CONTROL COMPT - 60000 CONTROL GROUP					
423	9	GE5645-1	SOCKET	2.55	22.95
424	15	41A264834G1	MODULE	27.60	414.00
425	1 -	17ET13F1	REACTOR	2,250.00	2,250.00
426	6	17ET34A1	REACTOR	603.00	3,618.00
427	9	41A244928P2	REACTOR	169.00	1,521.00
428	3	41A218054P1	INSULATOR	15.80	47.40
429	3	41A210624P1	INSULATOR	6.71	20.13
430	6	17LE117B1	PANEL	624.00	3,744.00
			SUB-TOTAL		11,637.48
AIR HOSE ARRANGEMENT					
431	4	41C600937P48	HOSE	4.38	17.52
432	4	41C600937P30	HOSE	11.60	46.40
			SUB-TOTAL		63.92
CONTACTOR - 17CM53E10A					
433	2 -	17CM53E10A	CONTACTOR	806.00	1,612.00
434	2 -	4739382G2	COIL	115.00	230.00
435	30	8867977P1	CONTACT	4.96	148.80
			SUB-TOTAL		1,990.80
CONTACTOR - 17CM55N3					
436	2 -	17CM55N3	CONTACTOR	1,190.00	2,380.00
437	4 -	4739356G1	COIL	238.00	952.00
438	25	9960190G6	CONT TIP	37.50	937.50
439	2 -	41D750063G1	ARC CHUTE	77.30	154.60
			SUB-TOTAL		4,424.10
CONTACTOR - 17CM55Y3					
440	2	17CM55Y3	CONTACTOR	963.00	1,926.00
441	6 -	4739356G1	COIL	238.00	1,428.00
442	36 -	9960190G2	CONTACT	17.90	644.40
443	4	2744700G2	ARC CHUTE	42.10	168.40
			SUB-TOTAL		4,166.80

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
REVERSER - 17DP22A1					
444	4 -	17MV38A6	VALVE	256.00	1,024.00
445	4 -	6714650P1	GASKET	.83	3.32
446	6 -	41C600937P10	CONNECTION	6.75	40.50
447	15	426C379G1	FINGER ASM	72.80	1,092.00
448	15	41A321867P1	SPRING	3.39	50.85
449	2	6735511G1	INTERLOCK	284.00	568.00
450	4 -	492A201G1	FINGER ASM	20.10	80.40
451	8 -	9963477G12	CONTACT	1.88	15.04
452	2 -	6715974P1	SUPPORT	15.60	31.20
			SUB-TOTAL		2,905.31
INTERLOCK - 17AF41C1					
453	3	17AF41M1	INTERLOCK	149.00	447.00
454	7	336B737G1	FINGER	5.95	41.65
455	15	8807882G1	CONTACT	2.84	42.60
456	15	487A605G1	CONTACT	3.80	57.00
			SUB-TOTAL		588.25
INTERLOCK - 17AF20B25S					
457	9	17AF20B25S	INTERLOCK	375.00	3,375.00
458	15	6700391G1	FINGER	10.80	162.00
459	30	6700398G1	FINGER	11.60	348.00
460	30	6700890G1	CONTACT	4.61	138.30
461	15	6700392G1	CONTACT	7.61	114.15
			SUB-TOTAL		4,137.45
MAG VALVES					
462	2 -	17MV36B2	VALVE	533.00	1,066.00
463	2 -	2738573G2	COIL	90.50	181.00
464	2 -	17MV39C2	VALVE	413.00	826.00
			SUB-TOTAL		2,073.00

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
BRAKING SWITCH - 17GP26B1					
465	4 -	17MV38A6	VALVE	256.00	1,024.00
466	2 -	41C600937P10	CONNECTION	6.75	13.50
467	21	426C380G1	FINGER ASM	72.80	1,528.80
468	24	496A427G1	CONTACT	33.10	794.40
469	24	492A199G1	FINGER	11.20	268.80
470	15	8801839G1	BAR	9.69	145.35
471	24	9963477G12	CONTACT	1.88	45.12
472	24	9963477G8	CONTACT	1.88	45.12
473	1	17GP26B1	SWITCH	9,790.00	9,790.00
			SUB-TOTAL		13,655.09
UPPER CONTROL COMPT. - TAB 70000					
474	3	17AF14H7	INTERLOCK	259.00	777.00
475	5	41A281451P27	CAPACITOR	30.30	151.50
476	30	41B564808G1	DIODE ASM	20.00	600.00
477	3	41A281049P11	DIODE	125.00	375.00
478	6	41B563171G101	MODULE	65.00	390.00
479	6	41B563171G19	TIMING MOD	65.00	390.00
480	3	41B563171G600	MODULE	65.00	195.00
481	24	41A278054G1	MODULE	14.00	336.00
482	3	41A278017G1	MODULE	80.40	241.20
483	3 -	41A278043G1	MODULE	13.50	40.50
484	4	41B566633G1	VARISTOR	52.10	208.40
485	1	482A614G1	PANEL	293.00	293.00
486	1	41A264231G1	PANEL	313.00	313.00
487	1	41A271329G2	PANEL	95.30	95.30
488	3	488A142G3	RES PANEL	505.00	1515.00
489	3	41B555393P1	RELAY	206.00	618.00
490	3	2X3756	COIL	12.10	36.30
491	3	41A245406P1	SWITCH	195.00	585.00
492	3	497A911P1	SWITCH	9.81	29.43
493	6	502A140P1	SWITCH	47.00	282.00
494	1 -	41A271471P1	PLUG	6.91	6.91
495	1	41A271471P3	CLAMP	2.98	2.98
496	7	41A271471P7	SOCKET PIN	.98	6.86
			SUB-TOTAL		7,488.38

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
VOLTAGE REGULATOR					
497	2 -	17FH23D5	REGULATOR	2,000.00	4,000.00
498	3	41A281530P4	CAPACITOR	32.50	97.50
499	3	41B581374P1	TRANSISTOR	78.90	236.70
500	3	41A281496P2	DIODE	62.30	186.90
501	3	41A281496P1	DIODE	52.80	158.40
502	3	41A281044P4	DIODE	14.80	44.40
503	3	41A271102G1	MODULE	333.00	999.00
504	3	41A278597G1	MODULE	178.00	534.00
505	6	41A267871P10	BREAKER	29.30	175.80
506	15	41A281668G2	LED	4.40	66.00
507	3	41A28109294	POTENTIOMTR	25.60	76.80
			SUB-TOTAL		5,575.50
WHEEL SLIP PANEL					
508	1	17FL281F2	PANEL	9,960.00	9,960.00
509	3	17FD1347A1	CARD	465.00	1,395.00
510	3	17FD1198B1	CARD	680.00	2,040.00
511	3	17FD1291A1	CARD	355.00	1,065.00
512	3	17FD1317A1	CARD	538.00	1,614.00
513	3	17FD1285A1	CARD	415.00	1,245.00
514	3	17FD1286A1	CARD	529.00	1,587.00
515	3	17FD1295A1	CARD	481.00	1,443.00
516	3	17FD1229A1	CARD	540.00	1,620.00
517	3	17FD1316A1	CARD	404.00	1,212.00
518	3	17FD1318A1	CARD	321.00	963.00
519	3	17FD1331A1	CARD	373.00	1,119.00
520	3	17FD1197A1	CARD	510.00	1,530.00
			SUB-TOTAL		26,793.00
EXC. PANEL - 17FL237L1					
521	3	17FD732A2	CARD	138.00	414.00
522	3	17FD733B3	CARD	678.00	2,034.00
523	6	17FD1409A1	CARD	298.00	1,788.00
524	3	17FD1322B1	CARD	493.00	1,479.00
525	3	17FD1321A1	CARD	251.00	753.00
526	3	17FD1310A1	CARD	410.00	1,230.00
527	3	17FD739C1	CARD	508.00	1,524.00
528	3	17FD1375A1	CARD	941.00	2,823.00
529	3	17FD1297A1	CARD	400.00	1,200.00
530	3	17FD1284A1	CARD	495.00	1,485.00
531	3	17FD1320A2	CARD	289.00	867.00
			SUB-TOTAL		15,597.00

ITEM	QTY.	PART NO.	PART NAME	UNIT PRICE	EXT. PRICE
PANEL - 17FM20301					
[illegible]	2 -	41A281049P8	DIODE	166.00	332.00
[illegible]	2 -	41A255036G1	CAPACITOR	23.80	47.60
[illegible]	2	41B551412P2	HEAT SINK	144.00	288.00
535	8	N22P21044B	SCREW CAP	.13	1.04
			SUB-TOTAL		668.64
PANEL - 17LE117B1					
536	4 -	41B560270P4	RELAY	72.40	289.60
537	2 -	41A262156P1	SOCKET	15.60	31.20
538	2 -	41A262157P1	CLIP	3.54	7.08
539	1	41A278269G1	MODULE	168.00	168.00
			SUB-TOTAL		495.88
RELAYS					
540	6	17LV66J10	RELAY	325.00	1,950.00
541	6	8860474G1	COIL	108.00	648.00
542	3	8860802G1	ARMATURE	20.50	61.50
543	12	8823875P1	SPRING	.80	9.60
544	3	8860803G3	BASE	7.13	21.39
545	18	8860749G1	FINGER	6.88	123.84
546	18	8823868P1	SPRING	.94	16.92
547	18	8807883G1	CONTACT	2.39	52.11
548	3	17LV67F9	RELAY	688.00	2,064.00
549	6	8860832G1	BASE	14.90	89.40
550	3	418566575P1	COIL	148.00	444.00
551	3	418566108P1	COIL	100.00	300.00
			SUB-TOTAL		5,780.67
ANNUNCIATOR PANEL					
552	1	17FM369A6	PANEL	1,236.00	1,236.00
			SUB-TOTAL		1,236.00
			TOTAL THIS SECTION		547,103.05

CEWP:1069F

ANNEX N

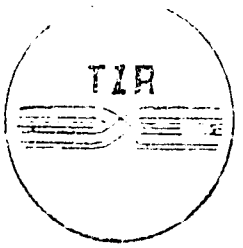
FAA SECTION 611(e) CERTIFICATION

As the officer serving as principal representative of the Agency for International Development for the Southern Africa Regional Program, having taken into account the maintenance and utilization of project capital assistance by the Tanzania-Zambia Railway Authority (TAZARA) previously financed by other donors and by TAZARA using its own funds, I hereby certify that in my judgement TAZARA has the financial and human resource capabilities to effectively maintain and utilize the capital assistance to be carried out under this project. I base this certification on, among other things, the programs TAZARA has implemented to date or is in the process of implementing. These programs include: (1) the retrofitting of 28 diesel hydraulic locomotives with new engines by TAZARA personnel, a program which was both planned and financed by TAZARA; (2) the recent procurement and use of 14 new diesel electric locomotives; (3) the development of plans, drawings, specifications and establishment of a budget account for the extension of the Mbeya workshop to increase its capacity and capabilities to conduct routine maintenance and major overhauling on diesel electric locomotives. Finally, the degree to which TAZARA's management has conscientiously attempted to rectify management and personnel constraints identified in various studies over the past three years is a testament to their competence as well as their dedication to making TAZARA more efficient and to increasing TAZARA's potential to effectively serve the SADCC member countries.

William S. Harris

Mission Director
USAID/Zimbabwe

ANNEX O



TANZANIA-ZAMBIA RAILWAY AUTHORITY

EMERGENCY REQUIREMENTS OF TAZARA

1987 • PRINTED BY THE GOVERNMENT PRINTER • LUSAKA

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EMERGENCY REQUIREMENTS OF TAZARA

1. BACKGROUND

Land-locked countries, in the Southern Africa Sub-region have hitherto, variously depended on South African Ports, Mozambican Ports and the Port of Dar es Salaam for the handling of their imports and exports. This is true, of Zambia Zimbabwe, Malawi, Botswana and Zaire.

As a consequence of the intensification of the Liberation Struggle in South Africa and Namibia, and the universal call by the International Community for the imposition of comprehensive and mandatory sanctions against South Africa, there has arisen a situation where the use of South African ports by these states has to be discontinued.

Most land-locked countries in the Southern Africa Sub-region will therefore have to divert their trade routes from South African ports to the Port of Dar es Salaam. As a matter of fact, there is already increased traffic on TAZARA as a result of such diversion. Zambia, for example, has already diverted almost all its metal and bulky traffic to the Port of Dar es Salaam.

As a necessary consequence TAZARA has to cope with this new situation of increased traffic volume from the land-locked countries in the sub-region.

2. TAZARA'S CAPACITY

The Tanzania Zambia Railway has a design capacity of 2.5 million tonnes of goods traffic per annum. So far, the highest tonnage of goods moved on TAZARA was during 1977/78 when 1.273 million tonnes were moved.

On average, TAZARA has been moving 1.1 million tonnes annually leaving spare capacity of 1.4 million tonnes per annum. Therefore, TAZARA has the capacity to handle additional traffic from countries in the Southern Africa Sub-region. However, in order to use the spare capacity to the fullest extent possible, TAZARA will require an injection of additional locomotives and wagons. Before these are acquired, emergency measures need to be taken to strengthen the capability for repair and maintenance of Locomotives and Rolling Stock in TAZARA workshops. It entails the purchase of additional equipment for TAZARA Workshops and spare parts to ensure the efficient maintenance of locomotives and wagons.

In that regard, following below is a narration of the emergency requirements of TAZARA to cope with the above mentioned situation.

3. SPARE PARTS

In order to maintain and repair locomotives and rolling stock so as to increase availability, of existing locomotives and rolling stock TAZARA requires a wide range of spare parts to the volume of about 5.8 million US Dollar. These spares are spelt out in the schedule attached hereto.

It should be noted that these spare parts are urgently required.

4. LOCOMOTIVES

TAZARA has an operational fleet of 81 Mainline Locomotives out of the 81 Mainline Locomotives, 14 are Diesel Electric obtained from the FRG. The remaining 67 mainline locomotives are of Chinese origin. These 67 locomotives are over 10 years old resulting into decreased performance and availability ratios.

However, TAZARA has managed to repower 24 of these locomotives. However, given the increase in traffic that will result from the diversion above mentioned, TAZARA does, as a matter of urgency, require an additional 27 new Diesel Electric Locomotives to augment the available locomotives.

Unfortunately, new locomotives cannot be bought off the shelf. It takes about 15 to 18 months, from the time of firm order, for a locomotive to come out of the production line. While funds are being sought for the purchase of new locomotives, and bearing in mind the long time it takes before a new locomotive is made available, a quicker and cheaper solution ought to be found in relation to our motive power problem. Such a solution can be found in the promotion of the REPOWERING PROGRAMME.

5. REPOWERING PROGRAMME

This programme consists of purchase of new engines from MTU of West Germany and fitting them into the shells of Chinese locomotives. Each shell requires two new MTU engines to be fitted. To date TAZARA has repowered 24 locomotives from its own funds. Unfortunately, due to Chinese spare parts loan repayments which fell due with effect from 1st July 1986, TAZARA has not spared funds with which to continue this important programme.

However, due to the anticipated traffic increase arising from the deteriorating situation in Southern Africa, repowering of more Chinese locomotives has become very necessary to TAZARA's operations. In order for TAZARA to be able to handle the additional traffic of 1.4 million tonnes, there is need to repower 58 DFH locomotives as soon as possible.

It should be noted that it is much cheaper to repower DFH locomotives than to purchase new Diesel Electric Locomotives. For example, from the price of one new Diesel Electric locomotive, one is able to repower not less than 2 DFH locomotives.

Besides, whereas it takes 15 to 18 months, from the time of firm order to delivery of a new Diesel Electric locomotive, repowering of one DFH locomotive takes about two months. In the short-term, therefore, repowering of more locomotives would ease the motive power problem of TAZARA.

5. WAGONS

The present TAZARA fleet of wagons is ageing. TAZARA requires 1,000 additional wagons. This addition is very necessary in view of the anticipated large increase in traffic volume on the Dar es Salaam route. Zambia has already diverted most of its traffic from South African ports to Dar es Salaam. Zambia Railways is at the moment using a good number of South African wagons which may not be available in the event of comprehensive and mandatory sanctions being imposed on South Africa. This will mean that Zambia Railways will have fewer wagons to spare for the Dar es Salaam route. The situation will be far worse if and when Zaire diverts its traffic from South African ports to Dar es Salaam.

The majority of wagons Zaire Railways use are South African. These will not be available for the Dar es Salaam route. Zaire Railways have very few wagons and these are old. If Zaire traffic is diverted to Dar es Salaam, we will have to depend, largely, on TAZARA wagons to move such traffic. This is more the reason why TAZARA should buy additional wagons of its own, rather than depend on contiguous railways. Under the TAZARA 10 Year Development Plan, Sweden has offered to finance and provide 200 wagons. But even in the event of these wagons being provided, these would be far short of our actual needs. Hence the need for additional wagons.

7. REHABILITATION OF 150 ACCIDENT WAGONS

TAZARA has a programme to rehabilitate 150 Accident Wagons by More Wear Industries of Zimbabwe. To start with more Wear Industries will rehabilitate 70 of these wagons. The progress of this rehabilitation will depend on the rate of availability of funds. TAZARA is therefore seeking for funds to speed up the implementation of the programme.

8. SECURITY CONSIDERATIONS

In the event of comprehensive mandatory sanctions being imposed on South Africa, and when these sanctions begin to bite, there is every likelihood that South Africa will retaliate against the frontline states.

One of their main objectives will be to render TAZARA ineffective through acts of sabotage. Thus our bridges, tunnels, workshops, stations, locomotives, rolling stock, etc., will be targets of these acts of sabotage.

If for example, any one of our major bridges is blown up or damaged as was the case during 1979, we must be in a position to restore the line as quickly as possible. It is prudent for us, therefore, to ensure that we have in stock materials for emergency bridge repairs, e.g., one or two bailey bridges. A determined effort should be made now to acquire these. Amongst all the threats posed to TAZARA, the possibility of acts of sabotage by agents of the racist regime of South Africa is the most worrying.

9. COST OF MTU AND KRUPP PERSONNEL TO ENHANCE LOCOMOTIVE MAINTENANCE

Presently TAZARA has two MTU experts in its workshops at Dar es Salaam and Mpika who are assisting in the maintenance of the 24 repowered locomotives. Their contract expired on 30th June 1986. For 1986/87 TAZARA had budgeted for the retention of the two experts. Unfortunately, following the devaluation of the shilling, the budgeted funds are only sufficient to cover the period up to December 1986. Unless additional funds are raised, there is danger that the two MTU experts will leave. This may have adverse effects on the availability of MTU engine repowered locomotives. Funds are also required for the retention of the KRUPP expert posted at Mbeya who assists in the maintenance of the 14 Diesel Electric Locomotives. The amount of money required for retaining the services of these three experts is shown on the attached schedule. It would greatly assist the situation, especially at this critical time if these experts continued assisting our technicians in the workshops.

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10. PURCHASE OF WORKSHOPS EQUIPMENT

In order to enhance the maintenance capacity and capability of TAZARA workshops, there is some badly and urgently required additional equipment and tools that need to be purchased. Details of the cost of these are in the attached schedule.

11. MAINTENANCE OF PERMANENT WAY

With largely increased traffic volume on TAZARA, there will be need for the railway line to be in the best operational state. To achieve this goal, additional tools and equipment need to be purchased in order to allow for quick and efficient maintenance. We will also require about 10 heavy motor trolleys for maintenance purposes. Details of these are on the attached schedule.

12. ACQUISITION OF MOTOR VEHICLES

Most of TAZARA operational stations, districts, departments and units have no means of transport. Most of the vehicles handed over after construction are now obsolete and too expensive to maintain.

This makes it difficult to ensure efficient and smooth operations as supervisors cannot get to places in good time when their presence is required there. Even our maintenance teams and supplies department, for example, do not have adequate and good trucks for transporting materials from place to place along the line. In order for TAZARA to prop-up its operational efficiency, there is an urgent requirement of the following vehicles:

9	(7-10 tonne) Lorries at	USD 1,175,000
26	(10 tonne) Tippers at	USD 1,950,000
66	Landrovers at	USD 1,650,000

Any assistance that can be mobilised to enable TAZARA purchase the above vehicles would be most apreciated.

13. CONCLUSION

Above, we have listed and briefly explained only some of the emergency requirements of TAZARA. On the attached schedule, is a full list of TAZARA emergency requirements, including the estimated costs thereof. Obviously, the estimated costs are subject to variation from time to time in view od the ever increasing costs for goods and services.

Tanzania Zambia Railway Authority
Head Office
P O Box 2834
DAR ES SALAAM

TAZARA'S EMERGENCY REQUIREMENTS ANNEX P

Phase	SERIAL NO	I T E M	ESTIMATED COST MILLION US D.	TYPE
1	1.	Supply of spare parts for maintenance of wagons.	0.200	ME 1
1	2.	Supply of spare parts for DFH locomotives including spare parts for the maintenance of and repair of repowered locomotives.	3.600	ME 1
1	3.	Supply of spares, service parts and tools for U30C Diesel Electric locomotives.	1.200	ME 1
1	4.	Supply of raw materials for repairs and workshops production.	0.400	ME 7
1	5.	Supply of tools and instruments for repairs shops.	0.041	ME 7
1	6.	Supply of various workshop equipment.	3.000	ME 7
1 + 2	7.	Repowering of 58 No DFH locomotives.	37.440	ME 1
1	8.	Rehabilitation of Diesel Electric locomotives 1004 and 1006.	2.000	ME 1
1	9.	Supply of crank cases, 3 turbo casings and various parts for rebuilding spare engines and components for diesel electric locomotives.	0.210	ME 1

Phase	SERIAL NO.	I T E M	ESTIMATED COST MILLION US D.	TYDP
1 - 2	1.	Acquisition of 1050 No goods wagons.	63.000	ME 1
1	2.	Acquisition of utility road transport.	3.325	
1	3.	Supply of 2 No earth moving equipment and accessories.	2.260	CE 2
1	4.	Supply of 3 No five tonne and 2 No 35 tonne fork lift trucks.	0.700	ME 4
		SUB-TOTAL	69.285	
		GRAND TOTAL	179.628	

ANNEX P

OTHER DONOR COMMITMENTS
COST ESTIMATE AND FINANCINGF OF TAZARA TEN YEAR DEVELOPMENT PLAN
AS OF FEBRUARY 1987

PROJECT NO.	PROJECT TITLE	ESTIMATED COST USD MILL.			FUNDING SECURED & SOURCE USD MILLION	FUNDING UNDER NEGOTIATION USD MILLION	FINANCING GAP USD MILLION
		Total	Foreign	Local			
PCU	Project Co-ordinating Unit	2.0	2.0	-	2.0 (Nordic)	-	-
CE:1	Rehabilitation of Quarries	17.2	16.7	0.5	16.7 (SIDA)(EEC) 0.5 (TAZARA)	-	
CE:2	Permanent Rectication of Landslides	(5.0)	8.6	3.4	3.4 (TAZARA)	8.6 (ADB)	
CE:3	Mechanized Track Maintenance	15.1	14.7	0.4	12.5 (EEC)(AUSTRIA) 0.4 (TAZARA)	-	2.2
CE:4	Rail Welding	16.4	6.7	9.7	9.7 (TAZARA)		6.7
CE:5	Rail Burn Repairs	4.5	4.0	0.5	4.0 (SIDA) 0.5 (TAZARA)		-
CE:6	Terminal Facilities at New Kapiri Mposhi	0.3	-	0.3	0.3 (TAZARA)		
CE:7	Railway link TAZARA-Mpulungu Port, Zambia	0.4	0.4	-	-	0.4 (ADB)	-
ST:1	Solar Power Panels	3.2	2.3	0.9	0.8 (DANIDA) 0.9 (TAZARA)	-	1.5
ST:2	Back-up HF Radio Link	0.5	0.5		0.5 (DANIDA)		

PROJECT NO.	PROJECT TITLE	ESTIMATED COST USD MILL.			FUNDING SECURED & SOURCE USD MILLION	FUNDING UNDER NEGOTIATION USD MILLION	FINANCING GAP USD MILLION
		Total	Foreign	Local			
ST:2	Teleprinters	0.1	0.1	-	0.1 (DANIDA)	-	-
ST:4	Feasibility Study of Future Telecommunications System	0.2	0.2	-	-	0.2	-
ST:5	Automatic Train Stops	4.5	3.5	1.0	1.0 (TAZARA)	-	3.5
ST:6	Track Circuiting	1.6	1.1	0.5	0.5 (TAZARA)	-	1.1
ME:1	Locomotives	46.0	45.3	0.7	0.7 (TAZARA)	-	45.3
ME:2	Goods Wagons	48.3	38.0	10.3	10.3 (TAZARA)		
ME:3	Trolleys and Trailers	5.3	5.3	-	1.7 (Switzerland)	3.6 (Switzerland)	
ME:4	Handling Equipment for Goods Depots	2.0	2.0	-	2.0 (FINNIDA)	-	-
ME:5	Rescue Crane and Rerailing Equipment Accident Prevention	6.8	6.6	0.2	6.6 (FINNIDA)	-	-
ME:6	Wheel Lathes	3.0	3.0	-	3.0 (EEC)	-	-
ME:7	Mechanical Equipment for Workshops	2.0	2.0	-	1.5 (EEC)	-	0.5
GM:1	Technical Assistance to the Head Office	2.7	2.2	0.5	0.5 (TAZARA)	-	2.2
GM:2	Manpower Development Plan & Training Facilities	1.3	0.7	0.6	0.7 (NORAD) 0.6 (TAZARA)	- -	- -
	GRAND TOTAL	195.4	165.9	29.5	91.4	40.8	63.0

TAZARA TEN YEAR DEVELOPMENT PLAN
GOVERNMENT AGREEMENT FEBRUARY 1987

Government agreements have been signed between Tanzania/Zambia and

			1000 USD
Austria	for CE:3	50,000,000 Sch	3,870
EEC	for CE:1	3,510,000 ECU	3,830
	CE:3	3,592,000 "	3,920
	ME:6	2,720,000 "	2,970
	ME:7	1,370,000 "	1,500
	contingencies	1,808,000 "	1,980
Finland	for ME:5	29,500,000 FM	5,880
Sweden	for CE:1 & CE:5	110,000,000 SEK	16,860
Switzerland	for ME:3 (CE:5)	3,400,000 SF	2,200

PRELIMINARY SCOPES OF WORKS FOR TECHNICAL ASSISTANCE

I. Locomotive Engineering Assistance (36 person-months full time)

36 person-months of long-term technical assistance will be provided as part of the contract to purchase locomotives. The engineer will train staff at the Mbeya workshop on the assembly and maintenance of the diesel electric locomotives. He will reside at Mbeya and work under the supervision of TAZARA's Chief Mechanical Engineer.

II. Railway Management/Operations (102 person-months)

(i) Railway Systems Management Specialist (36 person-months full-time).

A minimum of 20 years experience on all aspects of diesel electric (preferably General Electric) and diesel hydraulic locomotives operations and workshops is required. Experience in fleet operations (including coaches and wagons), and management control system is necessary. Preference will be given to persons experienced on medium sized railway in Africa.

Working under the supervision of the Deputy General Manager, the Railway Systems Management Specialist will:

Review existing systems at Dar es Salaam, Mbeya and Mpika

in the areas of operations management, inter management, workshop planning and fleet assignment. These areas should be broken down into sub areas of materials, production, supervisory and quality (management). Relation between offices and workshops, financial, purchasing, stores, purchasing, stores, planning, operations, performance, personnel, equipment fleet (inter management) interrelation of materials, labor, equipment for work planning components and subcomponents production, (workshop planning) locomotive, wagons, coaches, plant, labor availability for operation and/or maintenance, fleet status and location (fleet assignment) should be analysed and reviewed with written recommendations and work plans necessary for improvement of operations.

Discuss with TAZARA officials, plans and recommendations above and implement findings and new systems.

Provide report to short term systems consultants for their review and recommendation on systems control. Work with them in discussions with TAZARA management on objectives, simplification, part use of existing system and/or easiness of training and transitioning into new permanent and future systems. Provide comments to consultants and TAZARA and assist in bringing trial systems to successfully operating conclusions.

Assist TAZARA officials in operation of sequenced new systems.

Review skilled labor and equipment methods of increasing efficiencies in workshop operations. Make recommendations, and formulate program.

Review methods of increasing efficiencies in fleet operations. Make recommendations and formulate program.

Participate in USAID and TAZARA regularized project meetings, monitoring and evaluations.

Cooperate with other USAID management consultancies.

At termination of consultancy, prepare summary report of work done, problems perceived, solved and being solved.

(ii) Mechanical Engineer (9 person-months)

Working under the supervision of the corporate Planning Manager, the Senior Planning Officer - Mechanical Engineering will:

Translates the transport demand into appropriate operational indices and plans for Mechanical Engineering.

Working in collaboration with the railway systems management specialist conducts assessment of existing capacity of mechanical equipment vis a vis the Plan.

Review and provide advise on all proposals for investments in Mechanical equipment.

Helps in design and compilation of specifications for investments in equipment.

Liaises with manufacturers and Donors in all matters related to new equipment.

Coordinates all ongoing mechanical engineering projects.

Assists and advises on formulation of Corporate strategy and policies appropriate to Mechanical Engineering.

Receives and studies all statistical data related to Mechanical Engineering and makes correct interpretation of or use in corporate planning and management.

(iii) Railway Management Control Systems (18 person-months)

18 person-months of specialist to develoip inventory, production and quality contiol systems that will cover material and spare parts availability, stock control, storage security procedures, advance order routines, material work expedition, production scheduling, production reporting work standards, work planning, work measurement, work incentives, performance measurements, quality measurements, effective material and work, quality documentation, employees awareness of their responsibilities, employees awareness of their contribution and employees morale and attitudes.

(iv) Transport Economist, Market Analyst and Traffic Forecaster (24 person-months):

Working under the supervision of the Planning Manager, the Transport Economist will:

Conducts traffic surveys to determine transport demand.

Determines the operational goods and plans.

Translates Traffic Forecasts into operational indices.

Develops operational plans to achieve the main plan.

Conducts in collaboration with Finance and annual review of Traffic Costing and advises on appropriate tariffs.

ANNEX T

ACTION MEMORANDUM FOR THE ADMINISTRATOR

SUBJECT: Sole Source Waiver for Southern Africa Regional Transport Development - Dar es Salaam Corridor (690-0240)

Problem: A sole source waiver is requested under the subject project to permit procurement of locomotive spare parts, components, special tools and test equipment directly from the General Electric Company, in an amount not to exceed $1.5 million. In addition, this sole source waiver includes 36 person/months of technical assistance in connection with the repair of existing General Electric locomotives, in an estimated amount of $750,000.

Discussion: An important component of the project is to overhaul 11, and to repair two damaged General Electric/Krupp diesel electric locomotives already in TAZARA's possession. A core list, estimated at approximately $1 million of spare parts needed for these locomotives, is contained in Annex M of the Project Paper.

Certain pre-implementation technical assistance is planned under an IQC to assist TAZARA with the procurement process. The IQC team will review technical specifications for the 17 new locomotives and assess the different levels of technical assistance and other support required by different suppliers to provide TAZARA with an equal end product. In addition, the IQC team will complete and verify the list of needed spare parts for the existing GE locomotives. It is anticipated that this review will yield a final list valued at up to $1.5 million, which is the upper limit of this waiver for commodities.

The General Electric Company has taken a strong position that only genuine GE spare parts should be used in the overhaul and repair of GE locomotives. Genuine GE parts are defined as those parts either manufactured by GE itself or by other firms for GE, with testing by GE. GE's position is based on a history of bad experiences with unauthorized and inferior parts provided by other firms, some of which are sold on the market as genuine GE parts. For this reason, GE has notified A.I.D. that it will not participate in the related technical assistance services to overhaul TAZARA's existing locomotives if genuine GE spare parts are not used. GE reports being plagued by the results of uneven quality and inferior metallurgy in many of the "clone" parts provided for use in GE equipment by other firms. Their use can allegedly cause serious damage to the engine and other moving parts of GE locomotives.

Regarding technical assistance associated specifically with the spare parts and the overhaul and repair of the 13 existing GE locomotives, it is estimated that up to 36 person/months of TA services by a locomotive engineer will be required. The Project Paper's TA component calls for 36 person/months of locomotive engineering services, which are to be part of the procurement contract for the new locomotives. The PP also notes that locomotive technical assistance will be needed to overhaul and repair the existing 13 GE locomotives, but does not distinguish between these two requirements. If the new procurement contract is won by GE, the same individual could perform both functions in less total time. If another supplier wins the contract for the new locomotives, that firm would furnish the engineer for a period of up to three years to oversee maintenance and training in connection with the new locomotives. Irrespective of the outcome of the procurement competition, a clear need is seen for up to 36 p/m in technical assistance to oversee the overhaul and repair of the existing GE locomotives. This waiver for sole source procurement of technical services provides for a locomotive engineer from GE for this purpose.

Justification: AFR/TR/ENG agrees that "genuine GE" spare parts are the only ones which are reliable in this instance. Even though the locomotives to be overhauled and repaired were manufactured in Germany by Krupp under license from GE, parts of U.S. source/origin supplied by GE (US) will fit and will be procured under this waiver. The issue is one of quality and dependability, and experience has shown that parts provided by other firms do not perform satisfactorily on a consistent basis. This condition fits the standard for proprietary procurement in Handbook 11, Chapter 3, Section 2.2.5b(3), when "special design or operational characteristics are required".

In addition to spare parts, this waiver also covers special tools for the removal and insertion of these parts and certain test equipment necessary for use with them. The same criterion in Handbook 11, Chapter 3, Section 2.2.5b(3) also applies to these commodities, which have special design and operational characteristics.

Having established that parts and related tools must be "genuine GE" parts and that proprietary procurement is therefore justified, this waiver also covers sole source procurement from the General Electric Company, a U.S. firm, based on GE's recent decision to sell GE spare parts only to end users and no longer to traders or suppliers. This policy is documented by the attached letter from GE to the A.I.D. Africa Bureau Engineering Office, which as an example, encloses a GE letter to Kenya Railways on this subject. In both letters, GE cites the problem of inferior imitations being sold on the world market as genuine GE parts and points out that it has taken this action to protect not only the company but also the end users, who are thereby assured that they are receiving

authentic GE products. Since genuine GE spare parts will no longer be available from sources other than the General Electric Company, this satisfies the criterion of Handbook 11, Chapter 3, Section 2.2.6a.2, which permits a sole source waiver when "proprietary procurement is justified and the necessary equipment, material or spare parts are available from only one source".

Acquiring technical assistance from General Electric on a sole source basis for up to a 36 month period in connection with overhaul and repair of the existing GE locomotives is justified on the grounds that "special design or operational requirements require services available from only one source", as set forth in Handbook 11, Chapter 1, Section 2.4.a.3. This technical assistance requires thorough familiarity with both the locomotives and the parts associated with the overhaul and repair operation. Since only GE equipment and parts are involved, it is the judgment of both the field engineers and AFR/TR/EMG that the scope and quality of the service sought is not available from any source other than GE.

Since this waiver exceeds $1 million, it may be approved only by the Administrator, pursuant to Handbook 11, Chapter 1, Section 2.4.2c.1 and Chapter 3, Section 2.2.6.c.1.

Drafted: AFR/PD/SA: MGilbert

Clearances:	M/AAA/SER: JOwens (Draft)	Date: 8/17/87
	M/SER/OP/COMS: MMcDaniel (Draft)	Date: 8/19/87
	GC/AFR: MAKleinjan (Draft)	Date: 8/13/87
	AA: HFry	Date:_____

GENERAL ELECTRIC

TRANSPORTATION SYSTEMS BUSINESS OPERATIONS
GENERAL ELECTRIC COMPANY • 2901 EAST LAKE ROAD • ERIE, PENNSYLVANIA 16531

July 23, 1987

Mr. A. Tummarello
U.S. Department of State
Agency for International Development
AFR/TR/Eng
Room 2489 N.S.
Washington, D. C. 20523

Re: TAZARA
Parts for GE Licensed Krupp Built
U30C Diesel Electric Locomotives

Dear Mr. Tummarello:

We wish to confirm General Electric's position on various matters as raised during recent telephone conversations between yourself and the undersigned.

Firstly, with respect to Transportation Systems Business Operations recent policy decision to only sell renewal parts directly to end user customers, our letter dated August 29, 1986 to Kenya Railways is typical of what was sent to railroads around the world. A copy is attached for your information.

Secondly, with respect to our parts pricing, we have a published Price List of items we consider to be stock authorized. A copy of our February 1, 1986 Price List is enclosed. Although this copy has not been kept up-to-date, to reflect line item price changes over the past 17 months, it is offered to demonstrate the fact that we do publish our prices. Our end-user customers receive copies of our price book when published and routine amendments or supplements are sent out to all recipients automatically. We would be happy to provide you with a copy of our new Price List which should be issued later this year.

Thirdly, with respect to your request that we provide "Best Commercial Pricing" in the event GE is awarded this business on a proprietary basis, we are willing to treat the Tazara to preferential pricing for any renewal parts purchased on a proprietary basis and funded by U.S. Aid. Said preferential pricing will be in the form of a discount from our published price in effect at time of order. The rate of discount will be dependent upon the terms and conditions of purchase imposed. As an example, if the terms of delivery are F.O.B. factory with freight prepaid to East Coast Port of Export, and the goods packed in containers for shipment, we would offer a discount of 10-15% below our published prices.

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GENERAL ELECTRIC

Fourthly, I have considered your inquiry regarding technical advisory services in connection with the overhaul of locomotives at great length. Frankly, it simply does not make any economic sense for us to offer such services unless they are associated with substantial orders for parts associated with the rebuild. Difficult market conditions in recent years have resulted in major reductions in personnel and we have to apply our limited resources where it makes the most sense. Furthermore, as indicated in the attached letter to Kenya Railways, we have serious concerns about inferior parts that have appeared on the market that purport to be genuine General Electric parts.

For the above reasons, we are not interested in offering technical advisory services at this time unless the parts utilized in the overhaul are genuine General Electric parts.

We trust the above accurately reflects your understanding of our recent discussions. If there are any serious deviations, or if you have any additional points to discuss, please do not hesitate to contact the undersigned.

Very truly yours,

R D Parisi for T. Nelson.

T. E. Nelson

rdp/5

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GENERAL ELECTRIC

TRANSPORTATION SYSTEMS BUSINESS OPERATIONS
GENERAL ELECTRIC COMPANY • 2901 EAST LAKE ROAD • ERIE, PENNSYLVANIA 16531

29 August 1986

Managing Director
Kenya Railways
PO Box 30121
NAIROBI
Kenya

SUBJECT: SUPPLY OF GENERAL ELECTRIC SPARE PARTS

Gentlemen,

We wish to advise the Kenya Railways of a new General Electric Policy concerning the supply of locomotive spare parts worldwide.

Effective immediately, General Electric Company will no longer supply locomotive spare parts to anyone other than end user customers.

This means that traders, who buy solely for the purpose of resale, will no longer have access to General Electric parts. General Electric effected this policy because in most cases, traders do no add value to a transaction, nor, do they provide any after sales support for the parts that they provide. Over the years, General Electric and our user customers have been plagued with situations where inferior quality parts are sold on the world market under the pretense that they are genuine GE parts. When those parts fail or do not provide the performance that they should, the victim of the situation are the users and ourselves.

Under our new policy, the authenticity of parts will be very clear. The only source of genuine GE spare parts, is General Electric.

We trust that Kenya Railways will understand and agree with this new policy.

Should you have any questions or wish to discuss it, please do not hesitate to contact us.

Sincerely yours,

R C Ballou

ROBERT C. BALLOU

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ANNEX U

Department of State

INCOMING TELEGRAM

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ACTION AID-00

ACTION OFFICE AFPD-14
INFO AAAF-03 AFEA-33 AISA-01 AFDP-06 SEOP-01 FPA-02 SERP-01
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FCA-01 PPPF-01 GCLM-02 FVC-02 ES-01 OMB-02 TRSY-05
RELO-01 TELE-01 /053 A1 228

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TO SECSTATE WASHDC IMMEDIATE 2226
AMEMBASSY DAR ES SALAAM IMMEDIATE
INFO AMEMBASSY HARARE IMMEDIATE
AMEMBASSY LUSAKA IMMEDIATE

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AIDAC

SECTAFE FOR AFR/PD, M. GILBERT, CC/AFR, M. KLEINJAN

E.O. 12356: N/A
SUBJECT: SOUTHERN AFRICA REGIONAL - TRANSPORT DEVELOPMENT - DAR ES SALAAM CORRIDOR PROJECT (690-0240)

REF: (A) STATE 245146, (B) STATE 266811

1. PER PARA 20 OF REF (A), TEXT OF ACTION MEMO TO ADMINISTRATOR REQUESTING COMMINGLING DETERMINATION FOLLOWS BELOW. THIS TEXT HAS BEEN REVIEWED AND APPROVED BY THE AMBASSADORS AND AID REPRESENTATIVES BOTH IN DAR ES SALAAM AND LUSAKA AND BY THE SARP DIRECTOR IN HARARE.

2. TEXT FOLLOWS, QUOTE:

ACTION MEMO

TO: ACTING ADMINISTRATOR
THRU: ES
FROM: ACTING ASSISTANT ADMINISTRATOR FOR AFRICA

PROBLEM: YOUR APPROVAL IS REQUIRED FOR AN EXCEPTION TO A.I.D.'S POLICY PROHIBITING THE COMMINGLING OF A.I.D. PROJECT ASSISTANCE WITH COMMUNIST BLOC ASSISTANCE IN ORDER TO PERMIT THE AUTHORIZATION OF A DOLS. 45.95 MILLION GRANT TO THE TANZANIA-ZAMBIA RAILWAY AUTHORITY (TAZARA) UNDER THE REGIONAL TRANSPORT DEVELOPMENT - DAR ES SALAAM CORRIDOR PROJECT (690-0240).
BACKGROUND AND DISCUSSION

1. U.S. REGIONAL ASSISTANCE TO SOUTHERN AFRICA AND THE TAZARA PROJECT

A KEY PART OF A.I.D.'S SOUTHERN AFRICA REGIONAL PROGRAM (SARP) STRATEGY IS SUPPORT FOR THE REGIONAL DEVELOPMENT EFFORTS OF THE NINE MAJORITY RULED STATES IN SOUTHERN AFRICA COORDINATED THROUGH THE SOUTHERN AFRICA DEVELOPMENT COORDINATION CONFERENCE (SADCC). ONE OF THE OBJECTIVES OF SADCC IS TO REDUCE THE REGION'S ECONOMIC DEPENDENCE, PARTICULARLY ON THE REPUBLIC OF SOUTH AFRICA. OF FIRST PRIORITY TOWARDS THAT END IS THE REHABILITATION, UPGRADING AND MAINTENANCE OF EXISTING TRANSPORT FACILITIES IN THE REGION TO COPE WITH CURRENT AND POTENTIAL TRAFFIC DEMANDS. THE IMPROVEMENT OF THE BASIC REGIONAL TRANSPORT INFRASTRUCTURE IS ALSO IMPORTANT TO SADCC'S PROPOSED NEW PROGRAM STRATEGY WHICH WILL, AMONG OTHER THINGS, EMPHASIZE INCREASED TRADE BOTH

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WITHIN THE REGION AND WITH OVERSEAS MARKETS.

THE TRANSPORT SECTOR, WHICH IS SADCC'S HIGHEST PRIORITY, ALSO REPRESENTS THE HEAVIEST COMMITMENTS OF DONOR AND SADCC MEMBER RESOURCES TO DATE. A TOTAL OF 32 MAJOR PROJECTS HAVE BEEN PROPOSED AND COMMITMENTS RECEIVED TOTAL MORE THAN DOLS. 1.3 BILLION. SIX OF THE NINE MEMBER STATES OF SADCC ARE LANDLOCKED AND ARE TOTALLY DEPENDENT ON NEIGHBORING COUNTRIES FOR TRANSPORT OF 9.6 MILLION TONS OF SURFACE CARGO TRAFFIC ANNUALLY. AVAILABLE DATA ON TRAFFIC FLOWS AND TRANSPORTATION ROUTES IN THE REGION INDICATE THAT SHIPMENT TIME AND HIGH TRANSPORT COSTS ARE CURRENTLY THE MOST SEVERE PROBLEMS FOR THE LANDLOCKED COUNTRIES. SADCC PROPOSES TO REOPEN THE REGION'S PRINCIPAL TRANSPORT ROUTES WHICH AT ONE TIME WERE RELIABLE, COST EFFECTIVE AND CARRIED THE BULK OF THE REGION'S CARGO. IN ADDITION, SOME ALTERNATIVE ROUTES TO THE SEA FOR ITS LANDLOCKED MEMBER COUNTRIES ARE BEING DEVELOPED, SUCH AS THE MULTI-DONOR MALAWI NORTHERN CORRIDOR PROJECT. FOR THE VERY NEAR TERM, SADCC HAS IDENTIFIED THE DAR ES SALAAM (NORTHERN) CORRIDOR AS A SECURE, SAFE, RELIABLE AND COST EFFECTIVE ROUTE AND HAS SOLICITED DONOR ASSISTANCE FOR AND ENCOUFAGED MEMBER STATES' USE OF THE TANZANIA-ZAMBIA RAILWAY TO THE TANZANIA PORT OF DAR ES SALAAM. IN ORDER TO RESPOND TO THIS NEED, A.I.D. HAS OVER THE LAST EIGHTEEN MONTHS DESIGNED THE REGIONAL TRANSPORT DEVELOPMENT-DAR ES SALAAM CORRIDOR PROJECT (690-0240), A PROPOSED 4-YEAR, DOLS. 46 MILLION PROGRAM OF TECHNICAL ASSISTANCE, COMMODITY, CONSTRUCTION AND TRAINING SUPPORT TO THE TANZANIA-ZAMBIA RAILWAY AUTHORITY (TAZARA). THE SPECIFIC PROJECT COMPONENTS ARE MORE FULLY DESCRIBED IN PARAGRAPH 5 BELOW. THE GOAL OF THE PROJECT IS TO SUPPORT THE DEVELOPMENT OF A STRONG ECONOMIC FOUNDATION FOR GROWTH IN SOUTHERN AFRICA THROUGH THE STRENGTHENING AND EXPANSION OF THE CARRYING CAPACITY OF TAZARA AND THE

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Department of State

INCOMING TELEGRAM

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ACTION AID-00

ACTION OFFICE AFPD-04
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RELO-01 TELE-01 /053 A3 228

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AMEMBASSY DAR ES SALAAM IMMEDIATE
INFO AMEMBASSY HARARE IMMEDIATE
AMEMBASSY LUSAKA IMMEDIATE

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AIDAC

SECTAFR FOR AFR/PD, M. GILBERT; GC/AFR, M. KLEINJAN

E.O. 12356: N/A
SUBJECT: SOUTHERN AFRICA REGIONAL - TRANSPORT

IMPROVEMENT OF ITS OPERATIONAL EFFICIENCY. BY THE END OF THE FOUR-YEAR LIFE OF THE PROJECT, THE FOLLOWING ACCOMPLISHMENTS ARE EXPECTED:

- INCREASE IN CARGO HAULED ANNUALLY FROM 988,000 MT IN 1986 TO 1.9 MILLION MT IN 1991.

- A 40 PERCENT INCREASE IN THE AVERAGE LOCOMOTIVE AVAILABILITY RATE FROM 46 PERCENT IN 1986 TO 65 PERCENT IN 1991.

- AN APPROXIMATELY 10 PERCENT DECREASE IN THE AVERAGE WAGON TURNAROUND TIME (DAR ES SALAAM - KAPIRI MPOSHI) FROM THE CURRENT AVERAGE OF 31 DAYS TO 28 DAYS IN 1991.

- AN INCREASE IN CARGO CARRYING CAPACITY TO 2.1 MILLION MT A YEAR BY 1993.

ASSISTANCE TO TAZARA IS PART OF A.I.D.'S STRATEGY TO IMPROVE THE SADCC NORTHERN CORRIDOR TRANSPORT SYSTEM, SUPPORTING TAZARA COMPLEMENTS CURRENT SARP TRANSPORTATION PROJECTS ON THE NORTHERN CORRIDOR, INCLUDING THE ZAMBIA REGIONAL TRANSPORT PROJECT (690-0231) WHICH PROVIDES LOCOMOTIVES AND WORKSHOP EQUIPMENT TO THE ZAMBIA RAILWAYS, AND THE MALAWI NORTHERN CORRIDOR PROJECT (690-0237), WHICH PROVIDES ASSISTANCE TO THE MALAWI TRANSPORT SYSTEM IN ORDER TO LINK IT TO TAZARA AND DAR ES SALAAM.

A MAJOR ISSUE WHICH HAS ARISEN DURING THE DESIGN OF THE PROJECT IS WHETHER A.I.D. MAY PROVIDE ASSISTANCE TO TAZARA IN VIEW OF THE SUBSTANTIAL AMOUNTS OF ASSISTANCE TAZARA HAS RECEIVED SINCE 1965 FROM THE PEOPLE'S REPUBLIC OF CHINA (PRC). UNDER A.I.D. REGULATIONS, A.I.D. MAY NOT PROVIDE PROJECT ASSISTANCE TO A COMMUNIST BLOC PROJECT OR ANY ACTIVITY WHICH WOULD PROMOTE OR ASSIST A BLOC PROJECT UNLESS YOU DETERMINE THAT IT WOULD BE IN THE BEST INTERESTS OF THE U.S. TO DO SO. THE REMAINDER OF THIS MEMORANDUM DESCRIBES THE CONTEXT IN WHICH A.I.D. ASSISTANCE WOULD BE PROVIDED TO TAZARA AND PROVIDES THE BASIS FOR YOU TO DETERMINE WHETHER THE "COMMINGLING" OF A.I.D. AND BLOC ASSISTANCE IN THIS SITUATION IS PERMISSIBLE.

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2. HISTORY AND STRUCTURE OF TAZARA

THE TANZANIA-ZAMBIA RAILWAY AUTHORITY (TAZARA) WAS CREATED BY INTERNATIONAL AGREEMENT SIGNED BY THE GOVERNMENTS OF TANZANIA AND ZAMBIA IN MARCH 1968. THE AUTHORITY WAS ESTABLISHED AS A JOINT ENTERPRISE TO BE RESPONSIBLE, ON BEHALF OF THE TWO GOVERNMENTS, FOR COORDINATING THE CONSTRUCTION OF THE RAILWAY, WHICH WAS UNDERTAKEN BY THE PEOPLE'S REPUBLIC OF CHINA, AND FOR EFFECTING THE NECESSARY PREPARATIONS FOR THE MANAGEMENT OF THE RAILWAY WHEN IT BECAME OPERATIONAL. THE AGREEMENT, WHICH HAS SINCE BEEN AMENDED, PROVIDES FOR A SIX MEMBER COUNCIL OF MINISTERS, CONSISTING OF THREE MINISTERS DESIGNATED BY EACH CONTRACTING STATE, WHICH HAS OVERALL RESPONSIBILITY FOR THE FUNCTIONING OF THE AUTHORITY. SUBORDINATE TO THE COUNCIL IS A TEN MEMBER BOARD OF DIRECTORS, HALF APPOINTED BY EACH GOVERNMENT, WHICH IS RESPONSIBLE FOR THE POLICY, CONTROL AND MANAGEMENT OF THE AUTHORITY. DAY-TO-DAY MANAGEMENT IS THE RESPONSIBILITY OF A GENERAL MANAGER, WHO IS APPOINTED BY THE GOVERNMENT OF ZAMBIA, AND A DEPUTY GENERAL MANAGER, WHO IS APPOINTED BY THE GOVERNMENT OF TANZANIA. THE TAZARA AGREEMENT BETWEEN THE TWO GOVERNMENTS REQUIRES THAT THE STAFF BE RECRUITED ON AN EQUAL BASIS FROM THE TWO COUNTRIES. AT PRESENT, TAZARA HAS SOME 6,500 EMPLOYEES.

IN 1973, LEGISLATION WAS ENACTED IN BOTH TANZANIA AND ZAMBIA ESTABLISHING TAZARA AS A BODY CORPORATE IN EACH OF THE TWO COUNTRIES WITH FULL POWER AND AUTHORITY TO TAKE THE NECESSARY ACTIONS TO OPERATE THE RAILWAYS WITHIN EACH COUNTRY. THIS LEGISLATION ALSO VESTED IN TAZARA TITLE TO ALL MOVABLE PROPERTY PROVIDED BY THE PRC AND AUTHORIZED TAZARA TO TAKE POSSESSION OF AND USE ALL BUILDINGS AND LAND CONSTRUCTED OR IMPROVED BY THE PRC AS PART OF THE RAILWAY. THEREFORE, BOTH IN PRACTICAL AND LEGAL TERMS, THE OPERATION AND MANAGEMENT OF THE

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ACTION AID-00

ACTION OFFICE AFPD-24
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AMEMBASSY LUSAKA IMMED IATE

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AIDAC

SECTATE FOR AFR/PD, M. GILBERT; GC/AFR, M. KLEINJAN

E.O. 12356: N/A
SUBJECT: SOUTHERN AFRICA REGIONAL - TRANSPORT

AUTHORITY IS ENTIRELY IN THE HANDS OF TANZANIA AND ZAMBIA AND PERSONNEL FROM THE TWO COUNTRIES.

THE RAILWAY ITSELF IS ONE OF THE MAJOR LONG DISTANCE RAILWAYS IN CENTRAL AND EAST AFRICA, STRETCHING SOME 1020 KMS FROM KAPIRI MPOSHI IN ZAMBIA TO DAR ES SALAAM IN TANZANIA. THE RAILWAY WAS CONSTRUCTED TO SAME GAUGE AS OTHER RAILWAYS IN ZAMBIA AND SOUTHERN AFRICA AND SO IS CAPABLE OF RECEIVING THE INTERCHANGE OF WAGONS FROM OTHER SYSTEMS IN THE REGION. IT IS DESIGNED FOR A THEORETICAL CARRYING CAPACITY OF 5.0 MILLION TONS PER YEAR BUT HAS NEVER ATTAINED THAT CAPACITY. IN 1985/86 IT CARRIED 983,000 TONS. CURRENTLY, TAZARA CARRIES APPROXIMATELY 1.2 MILLION TONS, A 50 PERCENT INCREASE SINCE JANUARY 1985. SINCE OCTOBER 1986, ZAMBIA AND ZAIRE HAVE GREATLY INCREASED EXPORT SHIPMENT THROUGH DAR PORT BY WAY OF TAZARA. ZAMBIA ALONE INCREASED THE AMOUNT OF ITS TOTAL COPPER EXPORTS SHIPPED BY TAZARA FROM 60 PERCENT IN SEPTEMBER 1985 TO 90 PERCENT IN OCTOBER 1986 AND MALAWI IS PLANNING TO INCREASE SUBSTANTIALLY ITS USE OF THE TAZARA ROUTE. TAZARA FIGURES INDICATE THAT IN LAST TWO QUARTERS OF FY 85/86 OVER 20 PERCENT OF THE GOODS OFFERED FOR PICKUP WERE LEFT BEHIND OR DIVERTED TO OTHER TRANSPORT ROUTES DUE MAINLY TO INADEQUATE MOTIVE CAPACITY. ANY SIGNIFICANT INCREASE IN TONNAGE CAPACITY OVER CURRENT LEVELS WILL REQUIRE A SIGNIFICANT INCREASE IN LOCOMOTIVES AS WELL AS SPARE PARTS, TOOLS AND FACILITIES FOR MAINTENANCE, PERSONNEL TRAINING, AND TECHNICAL ASSISTANCE.

3. PRC ASSISTANCE TO TAZARA

ASSISTANCE FROM THE PEOPLE'S REPUBLIC OF CHINA TO THE GOVERNMENTS OF TANZANIA AND ZAMBIA FOR TAZARA BEGAN FORMALLY ON SEPTEMBER 1, 1967, WHEN THE PRC SIGNED AN AGREEMENT WITH THE TWO GOVERNMENTS WHICH PROVIDED FOR AN INTEREST FREE LOAN OF RMB 988 MILLION (APPROXIMATELY DOLS. 500 MILLION) FOR THE CONSTRUCTION OF THE RAILWAY. THE SIGNATURE OF THIS AGREEMENT FOLLOWED SEVERAL YEARS OF DISCUSSIONS BETWEEN THE GOVERNMENTS OF TANZANIA AND ZAMBIA AND A NUMBER OF WESTERN DONOR COUNTRIES, INCLUDING THE UNITED STATES, ALL OF WHICH DECLINED TO FINANCE THE PROJECT BECAUSE IT WAS NOT CONSIDERED AT THE TIME TO BE ECONOMICALLY VIABLE. UNDER THE 1967

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PRC/GOT/GOZ AGREEMENT THE PRC ASSUMED FULL RESPONSIBILITY FOR UNDERTAKING THE CONSTRUCTION OF ALL RAIL WORKS AND FOR PROVIDING ALL SUPPLIES, EQUIPMENT AND TRAINING NECESSARY TO MAKE THE RAILWAY OPERATIONAL, I.E., TO PROVIDE THE RAILWAY TO THE TWO GOVERNMENTS ON A TURNKEY BASIS. THE CONSTRUCTION COMMENCED IN OCTOBER 1970 AND WAS SUBSTANTIALLY COMPLETED IN 1975. ON JULY 1, 1976, TAZARA COMMENCED FULL PUBLIC SERVICE AND OFFICIAL HANDOVER OF THE RAILWAY TO THE GOVERNMENTS OF TANZANIA AND ZAMBIA OCCURRED ON JULY 14, 1976. AT THAT TIME, FULL OWNERSHIP OF ALL ASSETS OF THE RAILWAY PASSED TO TAZARA AND UNDER THE TERMS OF THE GOT/GOZ TAZARA ESTABLISHMENT AGREEMENT EQUALLY TO THE TWO GOVERNMENTS) AND MANAGEMENT OF THE RAILWAY WAS FULLY ASSUMED BY THE TWO GOVERNMENTS AND TANZANIAN AND ZAMBIAN MANAGEMENT STAFF.

TECHNICAL ASSISTANCE. DURING THE CONSTRUCTION OF THE RAILWAY, THE PRC ESTABLISHED A CHINESE RAILWAY WORKING TEAM TO MANAGE AND CARRY OUT THE CONSTRUCTION. WHILE PRECISE FIGURES ON THE TOTAL NUMBER OF CHINESE EMPLOYED DURING THE CONSTRUCTION PHASE ARE NOT READILY AVAILABLE, THE CHIEF OF THE CURRENT CHINESE TECHNICAL ASSISTANCE TEAM (CHINESE RAILWAY EXPERTS TEAM OR "CRET") HAS INDICATED THAT OVER 10,000 CHINESE HAVE BEEN EMPLOYED ON THE RAILWAY SINCE 1976 WITH A MAXIMUM AT ANY ONE TIME OF 16,000 RAILWAY EXPERTS AND SUPPORT STAFF. FOLLOWING TURNOVER IN 1976, THE NUMBER OF CHINESE DECREASED SUBSTANTIALLY, DROPPING TO 230 BY 1986. IN AUGUST, 1986, THE PRC SIGNED AN AGREEMENT WITH THE TWO GOVERNMENTS UNDER WHICH THEY AGREED TO CONTINUE TO PROVIDE 100 EXPERTS WITH SUPPORT STAFF UNTIL AUGUST 1989. UNDER THE TERMS OF THIS ARRANGEMENT, THE GOVERNMENT OF TANZANIA PAYS ALL SALARY AND EXPENSES FOR THE 100 EXPERTS AND 50 OF THE SUPPORT STAFF, WITH PRC PAYING SALARIES AND EXPENSES OF AN ADDITIONAL 20 SUPPORT STAFF (MOSTLY IN THE MEDICAL FIELD). IT IS ASSUMED THAT

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UNCLAS SECTION 04 OF 09 NAIROBI 29400

AIDAC

SECSTATE FOR AFR/PD, M. GILBERT; GC/AFR, M. KLEINJAN

E.O. 12356: N/A
SUBJECT: SOUTHERN AFRICA REGIONAL - TRANSPORT

THE NUMBER OF CHINESE EXPERTS WILL CONTINUE TO DECLINE AS EXISTING CHINESE ROLLING STOCK AND WORKSHOP EQUIPMENT IS REDUCED. THE CONTINUATION OF TECHNICAL ASSISTANCE TO AUGUST 1989 WAS, IN PART, NECESSITATED BY ADDITIONAL FINANCING OF ABOUT DOLS. 2.97 MILLION MADE AVAILABLE BY THE PRC FOR THE PURCHASE OF SPARE PARTS FOR CHINESE EQUIPMENT AS PART OF THE AUGUST 1986 AGREEMENT

THE CURRENT 108 EXPERT CHINESE TECHNICAL ASSISTANCE TEAM FUNCTIONS PRIMARY AT THE MIDDLE-MANAGEMENT LEVEL WITHIN THE MECHNICAL AND CIVIL ENGINEERING DEPARTMENTS, PROVIDING TECHNICAL ADVICE ON MAINTENANCE AND REPAIR OF CHINESE EQUIPMENT NECESSARY TO MAINTAIN CHINESE ROLLING STOCK. TEAM MEMBERS SEE THAT ROUTINE MAINTENANCE AND REPAIRS ARE CARRIED OUT AND REPORT FAILURES TO COMPLY WITH RULES TO TAZARA MANAGEMENT. THEIR WORK IS CONFINED ALMOST EXCLUSIVELY TO CHINESE-MADE EQUIPMENT AND AS CHINESE-BUILT LOCOMOTIVES ARE RE-ENGINED WITH NON-CHINESE PARTS THEY PAY NO FURTHER ATTENTION TO THEM (THE RE-ENGINE PROGRAM IS FINANCED BY THE FEDERAL REPUBLIC OF GERMANY, INCLUDING THE PROVISION OF TECHNICAL ASSISTANCE). THE ABILITY OF THE TEAM TO BECOME EXTENSIVELY INVOLVED IN TAZARA OPERATIONS HAS BEEN SEVERELY CONSTRAINED BY THE VERY LIMITED ENGLISH AND SWAHILI LANGUAGE CAPABILITIES OF MOST OF THE EXPERTS. NEVERTHELESS, CHET REPRESENTATIVES ARE ASKED TO PARTICIPATE, AS APPROPRIATE (AS ARE WESTERN DONOR TECHNICAL ASSISTANCE PERSONNEL SERVING IN TAZARA) IN TAZARA'S OPERATIONAL MEETINGS AND HAVE BEEN ASKED TO BE A PART OF COMMITTEES EVALUATING TENDERS FOR NEW EQUIPMENT AND SERVICES.

PHYSICAL FACILITIES AND EQUIPMENT. AT THE TIME OF HANDOVER IN 1976, TAZARA ACQUIRED SOME 1058 KM OF TRACK (INCLUDING SIDINGS), APPURTENANT SWITCHING AND COMMUNICATIONS EQUIPMENT AND 93 OPERATIONAL STATIONS (42 IN ZAMBIA) CONSTRUCTED BY THE PRC. THE AUTHORITY HAS TWO FULLY EQUIPPED LOCOMOTIVE ROLLING STOCK REPAIR WORKSHOPS, TWO LOCOMOTIVE RUNNING SHEDS, A HOME AND LIGHT REPAIR DEPOT AND THREE LOCOMOTIVE TURNAROUND DEPOTS. AS PART OF THE RAILWAY, THE PRC ALSO CONSTRUCTED THE FACILITIES FOR A RAILWAY TRAINING SCHOOL AT MPIKA IN ZAMBIA WHICH IS MANAGED AND OPERATED BY THE AUTHORITY.

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EQUIPMENT. AT TIME OF TURNOVER, TAZARA ACQUIRED 85 DEUTZ HONG KONG (DFH2) MAINLINE LOCOMOTIVES AND 17 DFH1 SHUNTING LOCOMOTIVES. LATER, IN 1979, TWELVE (12) ADDITIONAL DFH2 LOCOMOTIVES WERE PURCHASED FROM PRC. THROUGHOUT THE 10 YEARS IN WHICH TAZARA HAS BEEN OPERATIVE, THE ORIGINAL 85 DFH2 LOCOMOTIVES HAVE BEEN ONE OF THE MAJOR CAUSES OF OPERATIONAL DIFFICULTIES EXPERIENCED BY TAZARA, DUE PRIMARILY TO INADEQUATE ENGINE DESIGN. STARTING IN 1981, TAZARA BEGAN A PROGRAM TO REPOWER THE DFH2 AND DFH1 LOCOMOTIVES BY REPLACING THEIR ENGINES. TAZARA CURRENTLY HAS 38 OPERATIONAL LOCOMOTIVES, OF WHICH 43 ARE CHINESE DFH2'S AND DFH1'S AND 26 ARE DFH2 AND DFH1 LOCOMOTIVES WHICH HAVE BEEN REFITTED WITH WEST GERMAN ENGINES (THE REMAINING 11 LOCOMOTIVES ARE GE-KRUPP PURCHASED BY TAZARA FROM WEST GERMANY ON A SOFT LOAN BASIS BETWEEN 1981 AND 1985). AT TIME OF HANDOVER, THE PRC ALSO SUPPLIED 2056 WAGONS, 81 BRAKEVANS, AND 100 PASSENGER COACHES. THERE HAVE BEEN NO SIGNIFICANT ADDITIONS TO NON-LOCOMOTIVES ROLLING STOCK SINCE TURNOVER. AS INDICATED ABOVE, THE PRC AGREED IN AUGUST 1986 TO FINANCE THE PURCHASE OF AN ADDITIONAL DOLS.2.97 MILLION IN SPARE PARTS FOR CHINESE EQUIPMENT.

TRAINING. IN ADDITION TO THE TRAINING PROVIDED THROUGHOUT THE CONSTRUCTION PHASE, THE PRC WILL CONTINUE TO PROVIDE LIMITED ON-THE-JOB TRAINING TO TAZARA STAFF THROUGH ITS CHET UNTIL AT LEAST AUGUST 1989. IN 1987, CHINESE TEAM VISITED TANZANIA AND AGREED TO SEND 58 TANZANIANS/ZAMBIANS TO CHINA FOR TRAINING AT PRC EXPENSE, 40 FOR TWO-YEAR "REFRESHER" COURSES (FOR TRAINEES WHO HAVE ALREADY STUDIED IN CHINA) AND 18 PERSONS FOR 5 YEAR COURSES.

FUTURE PRC ASSISTANCE. THERE ARE NO CLEAR INDICATIONS AT THIS TIME WHETHER THE PRC WILL BE PROVIDING ANY

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AIDAC

SECTAFE FOR AFR/PD, M. GILBERT, GC/AFR, M. KLEINJAN

E.O. 12356: N/A
SUBJECT: SOUTHERN AFRICA REGIONAL - TRANSPORT

ADDITIONAL ASSISTANCE TO TAZARA IN THE FUTURE AID, IF SO, WHAT FORM THIS MIGHT TAKE. THE CURRENT CHIEF CHIEF OF PARTY HAS INDICATED THAT HE EXPECTS THE NUMBER OF TECHNICAL EXPERTS TO CONTINUE TO DECLINE AS MORE AND MORE CHINESE ROLLING STOCK AND EQUIPMENT ARE REFITTED OR REPLACED BY NON-CHINESE EQUIPMENT. AT A TAZARA DONORS CONFERENCE HELD IN DAR ES SALAAM ON FEBRUARY 13-14, 1987, THE CHINESE REPRESENTATIVE STATED THAT THEY WERE NOT PREPARED TO MAKE ANY NEW COMMITMENTS AT THAT TIME BUT WOULD REVIEW TAZARA'S LIST OF REQUIREMENTS.

4. OTHER DONOR SUPPORT TO TAZARA.

WHILE THE PRIMARY FINANCING FOR TAZARA IN THE PAST HAS COME FROM THE PRC, OTHER DONORS HAVE PROVIDED SIGNIFICANT ASSISTANCE TO TAZARA AND WILL BE MAKING SUBSTANTIAL FINANCING COMMITMENTS IN THE FUTURE. ON FEBRUARY 13-14, 1987, TAZARA HELD A DONORS CONFERENCE IN WHICH IT PRESENTED ITS TEN YEAR DEVELOPMENT PLAN DESIGNED TO MEET ANTICIPATED TRAFFIC DEMANDS, INCLUDING POSSIBLE DEVIATIONS OF TRAFFIC FROM SOUTH AFRICA ROUTES TO THE DAR ES SALAAM CORRIDOR. OF THE 21 MAJOR PROJECTS PROPOSED BY TAZARA, WESTERN DONOR COUNTRIES AND THE AFRICAN DEVELOPMENT BANK HAVE ALREADY AGREED TO FINANCE 14 AT AN ESTIMATED COST OF NEARLY DOLS. 90.0 MILLION. A.I.D.'S REGIONAL TRANSPORT DEVELOPMENT (DAR ES SALAAM CORRIDOR PROJECT WOULD BE THE FIFTEENTH PROJECT AND WOULD BRING TOTAL INVESTMENT IN TAZARA BY WESTERN DONORS OVER THE NEXT FEW YEARS TO OVER DOLS. 101 MILLION. TWO ADDITIONAL PROJECTS ESTIMATED TO COST DOLS. 68.3 MILLION ARE ALSO UNDER SERIOUS CONSIDERATION BY OTHER DONORS.

THE FOLLOWING IS A BRIEF DESCRIPTION OF PAST AND PRESENT NON-BLOC ASSISTANCE TO TAZARA.

- 1. NORDIC GROUP. NORAD HAS SET UP A PROJECT COORDINATING UNIT IN THE DEPARTMENT OF PLANNING TO MONITOR AND SCHEDULE ALL DONOR ACTIVITIES UNDER TAZARA'S 10 YEAR DEVELOPMENT PLAN. IT IS EXPECTED THAT THE UNIT WILL ALSO PREPARE A STRATEGY FOR MANPOWER REGISTRATION A COMPREHENSIVE MANPOWER DEVELOPMENT PLAN AND A STRATEGY FOR MANPOWER AND TRAINING REQUIREMENTS. THE THREE-PERSON NORAD LONG-TERM TECHNICAL ASSISTANCE TEAM WILL BE IN COUNTRY THROUGH 1988.

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- 2. THE FEDERAL REPUBLIC OF GERMANY HAS PROVIDED THE SERVICES FOR THREE YEARS OF A LOCOMOTIVE MECHANICAL ENGINEER TO MAINTAIN AND PROVIDE ON-THE-JOB TRAINING FOR TAZARA STAFF AT ABEYA WORKING ON THE 14 G.M.E.-MUPP DIESEL-ELECTRIC LOCOMOTIVES. THE LOCOMOTIVES WERE PROVIDED BY THE FRG THROUGH A SOFT LOAN WORTH DOLS. 30.0 MILLION. OVER HALF OF THIS LOAN HAS SINCE BEEN CONVERTED TO A GRANT. THIS ENGINEER'S CONTRACT ENDS IN OCTOBER 1987. THE WEST GERMANS HAVE INDICATED AN INTENTION TO CONTINUE THIS POSITION FOR AN ADDITIONAL FOUR YEAR PERIOD AND TO DO A FEASIBILITY STUDY ON THE NEED FOR ADDITIONAL NEW LOCOMOTIVES.

- 3. AFRICAN DEVELOPMENT BANK. ADB HAS DEVELOPED TERMS OF REFERENCE FOR CONSULTANT SERVICES TO COMPLETE PRE-CONTRACT WORK ON RECTIFICATION OF KNOWN DEFICIENCIES. ADB IS ALSO INTERESTED IN FINDING A DOLS. 2,400,000 RAILWAY LINK BETWEEN TAZARA AND MPULUNGU DEEP PORT, ZAMBIA.

- 4. EEC HAS PROVIDED DOLS. 12.0 MILLION FOR THE REHABILITATION OF QUARRIES. REHABILITATION ACTIVITIES WOULD STRETCH THROUGH MID-1992. EEC IS PROVIDING DOLS. 3.0 MILLION FOR WHEEL LATHES, DOLS. 1.5 MILLION FOR MECHANICAL EQUIPMENT FOR WORKSHOPS AND DOLS. 8.0 MILLION FOR MECHANIZED TRACK MAINTENANCE EQUIPMENT. THESE COMMODITIES SHOULD BE DELIVERED BEFORE THE END OF 1988.

- 5. SIDA IS CONTRIBUTING DOLS. 5.5 MILLION TO THE QUARRIES REHABILITATION WORK. SIDA HAS COMMITTED DOLS. 4.0 MILLION TO REPAIR RAIL BREAKS, AND DOLS. 10.0 MILLION FOR PURCHASE OF COCOS WAGONS. TAZARA IS CURRENTLY NEGOTIATING FOR AN ADDITIONAL DOLS. 28.0 MILLION FROM SIDA TO COVER THE REMAINING CAP IN COCOS WAGONS.

- 6. DANIDA PROVIDED DOLS. 0.5 MILLION FOR BACKUP HIGH FREQUENCY RADIO LINKS AND HAS ALSO BEGUN A DOLS.

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AIDAC

SECTAFE FOR AFR/PD, M. GILBERT; GC/AFR, M. PLEIMAN

E.O. 12356: N/A
SUBJECT: SOUTHERN AFRICA REGIONAL - TRANSPORT

0.8 MILLION PROJECT TO PROVIDE SOLAR POWER PANELS FOR TAZARA AND DOLS. 3.1 MILLION IN TELEPRINTERS. ALTHOUGH DANIDA MADE NO NEW PLEDGES AT THE CONFERENCE, TAZARA'S EMERGENCY PLANS AND THE 10 YEAR PLAN ARE UNDERGOING FURTHER STUDY AT DANIDA HEADQUARTERS.

- F. SWITZERLAND HAS OBLIGATED DOLS 1.7 MILLION FOR THE PURCHASE OF TROLLEYS AND TRAILERS AND ANOTHER DOLS 3.6 MILLION FOR SIMILAR EQUIPMENT IS UNDER NEGOTIATION

-G. FINLAND HAS OBLIGATED DOLS 2.0 MILLION FOR PROVISIONS OF CARGO HANDLING EQUIPMENT FOR COCOS DEPOTS, AND DOLS 6.6 MILLION FOR RECOLE CRANES AND RERAILING EQUIPMENT.

- H. NORWAY HAS COMMITTED DOLS. 0.7 MILLION FOR TRAINING FACILITIES

- I0. AUSTRIA HAS SIGNED AN AGREEMENT OF DOLS. 3.87 MILLION TO PROVIDE EQUIPMENT FOR TRACK MAINTENANCE.

5. PROPOSED U.S. ASSISTANCE TO TAZARA
THE PROPOSED PROJECT WILL FINANCE THE COMMODITIES AND SERVICES NECESSARY TO CARRY OUT ACTIVITIES FOR EXPANDING TAZARA'S CARRYING CAPACITY WHILE IMPROVING MANAGEMENT, STAFF AND OPERATIONAL EFFICIENCY. A SUMMARY OF PROPOSED A.I.D. ASSISTANCE FOLLOWS:

- - SUMMARY OF A.I.D.'S CONTRIBUTION

ITEM	COST IN U.S. DOLS.
17 3210 HP DIESEL ELECTRIC LOCOMOTIVES	25,500,000
SPARE PARTS AT 20 PERCENT EQUIVALENT OF COSTS OF LOCOMOTIVE.	5,100,000
45 PERSON-MONTHS OF TECHNICAL SERVICES - FOR ON-THE JOB TRAINING AND OTHER - TECHNICAL WORK FOR DIESEL ELECTRIC - LOCOMOTIVE.	967,000
SPARE PARTS FOR 11 AND REPAIR PARTS FOR - 2 GM/KRUPP DIESEL ELECTRIC LOCOMOTIVES	

- PRESENTLY IN TAZARA'S FLEET	1,000,000
36 PERSON-MONTHS OF TECHNICAL SERVICES - FOR OVERHAUL OF DIESEL ELECTRIC - LOCOMOTIVES AND 12 PERSON-MONTHS - OF SERVICES FOR INVENTORY OF PARTS	1,033,000
TOOLS AND EQUIPMENT FOR WORKSHOPS	1,800,000
MBEYA WORKSHOP EXTENSION	400,000
OTHER MANAGERIAL AND TECHNICAL - SERVICES (LONG-TERM)	1,174,000
OTHER MANAGERIAL AND TECHNICAL - SERVICES (SHORT-TERM)	2,112,000
OFFICE EQUIPMENT ASSOCIATED WITH - TECHNICAL ASSISTANCE	150,000
LONG- AND SHORT-TERM TRAINING	1,075,000
EVALUATION AND FINANCIAL AUDITS	150,000
- - - SUBTOTAL	DOLS. 40,461,000
CONTINGENCY AND INFLATION	DOLS. 5,489,000
- - - TOTAL -	DOLS. 45,950,000

A MORE DETAILED DESCRIPTION OF AID FINANCED PROJECT ACTIVITIES IS INCLUDED IN THE PP FOR THE PROJECT.

6. PUBLIC IDENTIFICATION OF TAZARA AS BLOC ASSISTANCE

FOR OBVIOUS REASONS, TAZARA HAS LONG BEEN IDENTIFIED WITH THE CHINESE AND MUCH OF THE GENERAL PUBLIC IN BOTH COUNTRIES AND IN SOUTHERN AFRICA ARE FAMILIAR WITH THE

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AIDAC

SECSTATE FOR AFR/PD, M. GILBERT; GC/AFR, M. PLEIMAN

E.O. 12356: N/A
SUBJECT: SOUTHERN AFRICA REGIONAL - TRANSPORT

ROLE THE CHINESE PLAYED IN FINANCING AND CONSTRUCTING THE RAILWAY. THE INVOLVEMENT OF THE CHINESE REMAINS PHYSICALLY EVIDENT (CHINESE MARKINGS ON FACILITIES AND EQUIPMENT, CHINESE TECHNICAL EXPERTS AT RAIL YARDS AND STATIONS) AND WILL CONTINUE TO BE SO IN THE FUTURE. A RECENT TAZARA PUBLICATION PROVIDING BACKGROUND INFORMATION ON THE RAILWAY DEVOTES CONSIDERABLE ATTENTION TO THE CONTRIBUTIONS THE CHINESE MADE TO THE RAILWAY AND TO PROVIDING ZAMBIA WITH A RELIABLE RAIL OUTLET TO THE SEA AFTER WHAT IS SEEN AS A FAILURE BY WESTERN COUNTRIES TO REALIZE THE IMPORTANCE OF THE RAILWAY. AT THE SAME TIME, HOWEVER, THE PUBLICATION INDICATES THAT TAZARA IS REGARDED AS AN IMPORTANT AFRICAN PROJECT, THE GREAT TUNDAU (FREEDOM) RAILWAY, UNDERTAKEN BY THE TWO GOVERNMENTS AS AN IMPORTANT STEP IN IMPROVING AFRICAN UNITY AND FREEING AFRICAN COUNTRIES FROM THEIR DEPENDENCE ON TRADITIONAL TRADE LINKS. IN THIS SENSE, AND DESPITE ITS ORIGINS, TAZARA IS VIEWED AS A TRULY AFRICAN UNDERTAKING WHICH IS FIRMLY IN THE HANDS OF AFRICANS.

IT IS CLEAR FROM THE DISCUSSION IN PARAGRAPH 4 ABOVE THAT MAJOR INVESTMENTS IN TAZARA ARE UNDERWAY BY WESTERN DONORS AND THAT TAZARA HAS MORE RECENTLY BECOME A BROADLY BASED MULTI-DONOR SUPPORTED EFFORT. AT THE SAME TIME, THE ROLE OF THE CHINESE IN TAZARA HAS BEEN STEADILY DECLINING AND IT DOES NOT APPEAR AT THIS TIME THAT THEY INTEND TO MAKE ANY SUBSTANTIAL NEW CAPITAL INVESTMENTS IN THE RAILWAY. AT THE TAZARA DONORS CONFERENCE IN F. F. OF 1987, THE CHINESE, ALTHOUGH PRESENT, PLAYED NO ROLE IN THE ORGANIZATION AND CONDUCT OF THE CONFERENCE, NOR DID THEY PLEDGE ADDITIONAL ASSISTANCE. AS ADDITIONAL ENGINES AND LOCOMOTIVES ARE PROVIDED TO TAZARA BY WESTERN DONORS, MOST OF THE ORIGINAL CHINESE LOCOMOTIVES CAN BE RETIRED FROM SERVICE, WHICH WILL ALSO PERMIT FURTHER REDUCTIONS OF THE CHINESE TECHNICAL PERSONNEL. THUS, INCREASED U.S. INVOLVEMENT WITH TAZARA SHOULD RESULT IN EVEN LESS VISIBLE PARTICIPATION IN THE PROJECT BY THE CHINESE.

ALL MAJOR ITEMS OF EQUIPMENT AND SPARE PARTS FINANCED UNDER THE PROJECT WILL BE OF U.S. SOURCE AND ORIGIN AND, IN ACCORDANCE WITH A.I.D. REGULATIONS, WILL BE CONSPICUOUSLY MARKED AS AMERICAN AID. GIVEN THE TYPES

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OF ASSISTANCE TO BE PROVIDED THERE IS NO POSSIBILITY THAT THE U.S. ASSISTANCE WILL BE MISIDENTIFIED AS BLOC ASSISTANCE AND U.S. FINANCED PARTS AND EQUIPMENT WILL NOT BE SUITABLE FOR MAKING OR KEEPING CHINESE EQUIPMENT OPERATIONAL. WE ALSO EXPECT THAT TAZARA WILL GIVE CONSIDERABLE PUBLICITY TO ANY MAJOR GRANT OF ASSISTANCE FROM THE U.S., BOTH IN TANZANIA AND ZAMBIA. SHOULD U.S. AND OTHER WESTERN DONORS SUCCEED IN REVITALIZING AND STRENGTHENING TAZARA, THERE IS, OF COURSE, THE POSSIBILITY THAT THE INCREASED ATTENTION FOCUSED ON TAZARA WILL INCREASE THE VISIBILITY OF PAST AND CURRENT CHINESE CONTRIBUTIONS TO THE RAILWAY. IT IS ALSO QUITE POSSIBLE, HOWEVER, THAT ANY MAJOR IMPROVEMENT IN TAZARA'S ABILITY TO SERVE THE LANDLOCKED SOUTHERN AFRICAN COUNTRIES WILL BE ATTRIBUTED TO THE U.S. AND WESTERN ASSISTANCE PROVIDED AT THIS CRITICAL POINT IN TIME.

7. IMPORTANCE OF THE PROJECT TO U.S. INTERESTS

BOTH IN THE INTERNATIONAL SECURITY AND DEVELOPMENT COOPERATION ACT OF 1985 AND THE SUPPLEMENTAL APPROPRIATIONS ACT FOR 1987, CONGRESS HAS CLEARLY INDICATED THE IMPORTANCE IT ATTACHES TO U.S. ASSISTANCE TO SECTOR PROJECTS SUPPORTED BY SADCC WHICH ENHANCE THE ECONOMIC DEVELOPMENT OF ITS MEMBER STATES, PARTICULARLY IN THE TRANSPORT SECTOR. THE FY 87 SUPPLEMENTAL APPROPRIATIONS ACT SPECIFICALLY APPROPRIATED SOME 37.5 MILLION FOR "URGENT" SECTOR PROJECTS SUPPORTED BY SADCC. OF THAT AMOUNT, SIXTY PERCENT WAS EARMARKED FOR THE TRANSPORTATION SECTOR AND OF THAT AMOUNT, ANY FUNDING MADE AVAILABLE FOR DESIGN, REHABILITATION, CONSTRUCTION, OR EQUIPMENT OF ANY RAIL OR PORT CORRIDOR IS TO BE USED EXCLUSIVELY FOR THE NORTHERN CORRIDOR LINKING SOUTHERN AFRICA WITH DAR ES SALAAM. ASSISTANCE TO TAZARA SERVES THE CRITICALLY IMPORTANT U.S. INTERESTS OF ASSISTING THE DEVELOPING COUNTRIES OF

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AIDAC

DEPARTMENT FOR AFR/EA, M. GILBERT, GC/AFR, M. FLEISHMAN

E.O. 11652: N/A
SUBJECT: SOUTHERN AFRICA REGIONAL - TRANSPORT

TANZANIA'S POLICY OF ENDING THE ECONOMIC DEPENDENCE OF SOUTH
AFRICA AND PROMOTING ECONOMIC GROWTH IN THE REGION.

1. LEGAL CONSIDERATIONS

SECTION 620(M) OF THE FOREIGN ASSISTANCE ACT OF 1961, AS
AMENDED, REQUIRES U.S. TO ADOPT SUSPENSIONS AND
TERMINATION PROCEDURES TO ENSURE THAT UNITED STATES
FOREIGN AID IS NOT USED IN A MANNER WHICH, CONTRARY TO
THE BEST INTERESTS OF THE UNITED STATES, PROMOTES OR
ASSISTS THE FOREIGN AID PROJECTS OR ACTIVITIES OF
COMMUNIST-DOMINATED COUNTRIES. THIS PROVISION WAS ADDED TO
THE ACT BY THE CONGRESS MOST RECENTLY BECAUSE OF INCIDENTS
IN WHICH SOME U.S. AID FUNDS WERE ALLEGEDLY EXPENDED
[illegible] DIRECTLY BENEFICIAL TO CUBAN, POLISH AND
[illegible] COMMUNIST AID PROJECTS, BUT FOR WHICH THE UNITED
[illegible] DID NOT EXPECT ANY CREDIT.

A.I.D. HAS ALWAYS STRICTLY INTERPRETED SECTION 620(M) AS
[illegible] EXCEPTIONS, AS A MATTER OF LAW, THE
[illegible] ASSISTANCE AND BLOC ASSISTANCE
[illegible] NECESSARILY WHERE, CONTRARY TO THE BEST
INTERESTS OF THE UNITED STATES, IT HAS BEEN DETERMINED, A.I.D. S
[illegible] NOT TO TERMINATE PROJECT ASSISTANCE TO
[illegible] OF THE PROJECT OR TO AN ESSENTIAL UTILITY
[illegible] TO ECONOMIC OR SOCIAL DEVELOPMENT PROJECTS. A.I.D.
HANDBOOKS ET, STATE THAT EXCEPTIONS TO
[illegible] BE MADE IN ADVANCE, HOWEVER, WHERE IT IS
[illegible] AT THE TIME OF EXPENDITURE, NOTING ON A
[illegible] THAT THE U.S. INTERESTS AND THE AMERICAN
[illegible] IN THE RECIPIENT COUNTRY, THAT THE PROPOSED
[illegible] WOULD BE CONTRARY TO THE BEST INTERESTS OF THE UNITED
STATES (A.I.D. HANDBOOK 1, SUPPLEMENT B, PARAGRAPH
9:2B). [illegible] THAT A.I.D. HAS EVER EXERCISED ON SUCH
[illegible] THE OPPORTUNITIES FOR ADVANCING THE
INTERESTS OF THE UNITED STATES THROUGH EXCEPTIONAL
ACTION [illegible] OF COMMUNIST BLOC OR UNITED STATES
[illegible] ASSISTED AID PROJECT, MANY CONSIDERATIONS OF
ENFORCEMENT AND OF MANNER OF THE POLICY, POLITICAL
[illegible] REASONS, COULD [illegible] THE PROPOSED MEANS
OF ASSURING [illegible] ABSENCE OF A MANNER.
VIEWED IN TANZANIA POLICY SETTING IN THESE
CONSIDERATIONS, WE BELIEVE THAT THERE ARE COMPELLING

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REASONS FOR MAKING AN EXCEPTION IN THIS INSTANCE AS
INDICATED IN THE FOREGOING DISCUSSION. ASSISTANCE TO
TANZANIA OFFERS THE UNITED STATES WITH AN EXCEPTIONAL
OPPORTUNITY TO ASSIST THE COUNTRIES IN SOUTHERN AFRICA
IN A VERY SUBSTANTIAL [illegible] AND A SPECIAL WAY IN
PROVIDING THEM THE MEANS TO REDUCE THEIR DEPENDENCE ON
SOUTH AFRICA, PROVIDING THEM WITH VIABLE ALTERNATIVE
TRANSPORT OPTIONS IN THE EVENT OTHER ROUTES ARE CLOSED,
AND IN PROMOTING ON A MAJOR SCALE REGIONAL ECONOMIC
DEVELOPMENT. THE PROJECT ALSO PROVIDES THE OPPORTUNITY
FOR THE U.S., ALONG WITH OTHER DONORS, TO BECOME
IDENTIFIED WITH THE NEW EXPLORATION AND STRENGTHENING OF
AN IMPORTANT AFRICAN INITIATIVE WHICH HAS RECEIVED BLOC
ASSISTANCE WHICH HAS BEEN SERIOUSLY INADEQUATE IN SOME
IMPORTANT RESPECTS. WHILE PRETA HAS BEEN AND WILL
CONTINUE TO BE STRENGTHENED OF THE IRC WITH TANZANIA,
THE EARLY OF BLOC INVOLVEMENT SEEM CLEARLY ON THE
DECLINE AND THERE IS EVERY CONFIDENCE IN THAT DIRECTION,
PARTICULARLY IF MAJOR ASSISTANCE IS PROVIDED AS PLANNED
BY WESTERN DONOR COUNTRIES. THERE IS VERY LITTLE
LIKELIHOOD THAT U.S. ACKNOWLEDGEMENT WILL BE MAINTAINED FOR
BLOC ASSISTANCE SO LONG AS THE GOT WILL NOT GET APPROPRIATE
CREDIT FOR IT, REGARDLESS. FAILURE TO GRANT AN
EXCEPTION SHOULD NOT BE U.S. IDENTIFICATION IN THE
PROJECT, WHICH WOULD BE REGARDED AS A FAILURE OF THE
U.S. TO LIVE UP TO ITS STATED COMMITMENT TO ASSIST THE
FRONT LINE STATES. IT WOULD, FOR A SECOND TIME,
TO APPEAR AS THE PRIME BENEFICIARY OF THE RAILWAY, BOTH
POLITICALLY AND ECONOMICALLY, TO THE AFRICAN COUNTRIES
IN THE REGION. SINCE THIS IS A PROJECT OF GREAT
IMPORTANCE TO BOTH ZAMBIA AND TANZANIA, A DETERMINATION
NOT TO FUND IT ON THE GROUNDS OF BLOC IDENTIFICATION
WITH THE PROJECT WHICH CAN NEVER BE COMPLETELY
ERADICATED, WOULD BE DIFFICULT FOR THEM TO UNDERSTAND
AND OBVIOUSLY WOULD NOT BE WELL RECEIVED. A.I.D.
REQUIREMENTS FOR IDENTIFICATION OF THE ASSISTANCE AS
U.S. AID WILL ALSO BE STRICTLY ADHERED TO.

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Department of State

INCOMING
TELEGRAM

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ACTION AID-06

ACTION OFFICE AFDP-04
INFO AAAF-03 AFEA-03 AFSA-03 AFDP-06 SEOP-01 FPA-02 SERP-01
AFTR-05 EVA-01 PPPB-02 GC-01 GCAF-01 SEOS-02 FM-02
FCA-01 FPMF-01 GCCM-02 PVC-02 ES-01 OMB-02 TRSY-05
PELO-01 TELE-01 /053 A3 228

INFO LOG-00 COPY-01 AF-00 CIAE-00 EB-00 DODE-00 001 W
126525 281413Z /40 38

O 281356Z AUG 87
FM AMEMBASSY NAIROBI
TO SECSTATE WASHDC IMMEDIATE 2234
AMEMBASSY DAR ES SALAAM IMMEDIATE
INFO AMEMBASSY HARARE IMMEDIATE
AMEMBASSY LUSAKA IMMEDIATE

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AIDAC

SECTATE FOR AFR/PD, M. GILBERT; GC/AFR, M. KLEINJAN

E.O. 12356: N/A
SUBJECT: SOUTHERN AFRICA REGIONAL - TRANSPORT

RECOMMENDATION: FOR THE REASONS SET FORTH ABOVE, IT IS RECOMMENDED THAT YOU APPROVE AN EXCEPTION TO A.I.D.'S POLICY PROHIBITING THE COMMINGLING OF AID PROJECT ASSISTANCE WITH ELOC ASSISTANCE IN ORDER TO PERMIT THE AUTHORIZATION OF THE REGIONAL TRANSPORT DEVELOPMENT (DAR ES SALAAM) CORRIDOR PROJECT (690-0240).

THIS MEMORANDUM HAS BEEN REVIEWED BY THE U.S. AMBASSADOR AND A.I.D. REPRESENTATIVES TO BOTH TANZANIA AND ZAMBIA AND A.I.D.'S DIRECTOR FOR THE SOUTHERN AFRICA REGIONAL PROGRAM IN HARARE AND THEY FULLY ENDORSE THIS RECOMMENDATION.

- - APPROVED: ----------
- - DISAPPROVED: ----------
- - DATE: ----------

END QUOTE. CONSTABLE

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