

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM : AAA/AFR/DR. ^{jwKoe hmi:j}~~John W. Koehring~~

SUBJECT: Project Authorization

Problem: Your approval is required for a grant of \$8,314,000 from the Section 105, Education and Human Resources Development appropriation, to the Government of Malawi (GOM) for the Malawi Polytechnic Engineering Expansion Project (612-0201). It is planned that \$1,500,000 will be obligated in FY 1980.

Discussion: Malawi's development policies emphasize improvement in the economic status of rural smallholders, and the need to provide trained manpower for specific development programs. Despite the high priority given by the GOM to foster rural development, the lack of skilled Malawians is hampering these efforts. In the immediate future, technical manpower requirements can be met by foreign assistance. Over a longer period of time, however, Malawi will need to acquire its own technological and administrative capability. The AID Country Development Strategy Statement (CDSS) states that a "long term goal is to improve institution building in Malawi and produce appropriately skilled manpower for institutions". One means for achieving this strategy is to invest in appropriate projects in areas of education and human resource development.

The proposed project is designed to assist the GOM increase the number of skilled technical Malawians involved in the country's development. Specifically, as a result of the activities designed in the project, the University of Malawi's Polytechnic College will graduate an improved and expanded Malawian engineering workforce to serve the country's public and private sectors. By the end of the project, as a result of A.I.D.-funded inputs, the Polytechnic College will graduate annually 100 engineering technicians, 75 sub-professional engineering diplomats, and 25 professional degreed engineers. A.I.D. will provide funds to: (1) construct and equip a new library, staff housing and laboratories; (2) provide participant training to 16 Malawians who will serve as instructors at the Polytechnic; and (3) provide 13 person-years of long-term technical assistance to assist the department heads in reviewing, assessing, and modifying the existing curriculum.

One million five hundred thousand dollars (\$1,500,000) is requested for obligation in FY 80. The life-of-project funding required is \$8,314,000 to be expended over the five-year project life. The following budget table outlines dollar expenditures by component for funds requested.

	FY 1980			
	(\$ 000)			
	<u>FY</u>	<u>LC</u>	<u>L.O.P.</u>	<u>TOTAL</u>
Technical Assistance	---	---	---	1,760
Equipment	---	---	---	292
Construction	900	38	938	2,417
Participant Training	48	---	48	1,280
Project Evaluation	---	---	---	64
Contingency/Inflation	<u>510</u>	<u>4</u>	<u>514</u>	<u>2,501</u>
	1,458	42	1,500	8,314

The Government of Malawi will contribute \$11,304,000 to this project which will finance recurrent costs, local costs for technical assistance, and some local construction costs. This amount represents 57% of the total project costs, thereby satisfying the host country cost-sharing requirement of Section 110(a) of the Foreign Assistance Act of 1961, as amended (the "Act").

It has been concluded from the analyses in the Project Paper that:

1. the project approach is technically and economically sound, socially acceptable, and administratively feasible, and that environmental considerations are addressed and incorporated into project implementation;
2. the technical design and cost estimates are reasonable and adequately planned pursuant to Section 611(a) of the Act;
3. the timing and funding of project activities are appropriately scheduled;
4. sufficient planning has been made for the monitoring and evaluation of project progress;
5. all statutory criteria have been satisfied; and
6. the GOM can meet the recurrent costs associated with the project.

The Mission recommends a negative determination for the Initial Environmental Examination (IEE). Your signature is required on the IEE (attached) for final approval.

The Project Agreement will contain the customary conditions to disbursement which are acceptable to the GOM. In addition to the standard provisions, conditions precedent will be included in the project agreement to ensure that:

- (1) the GOM can meet recurrent costs associated with the project;
- (2) construction plans, specifications and schedules are approved by AID;
- (3) commodities to be procured are approved by A.I.D.; and
- (4) chemicals utilized in the A.I.D.-financed laboratory are disposed of properly.

Additionally, the Project Agreement will include four covenants to ensure that:

- (1) housing is available for long-term technicians;
- (2) Malawians are made available for long-term training;
- (3) the GOM submits specific requests outlining in specific terms the technical assistance requirements for the project; and
- (4) a plan is completed by the GOM outlining specific goals for the polytechnic expansion.

The Project Authorization includes two waivers. The first requires that you approve a procurement source/origin waiver from A.I.D. Geographic Code 941 to Code 935 for the procurement of \$300,000 of construction materials. The second requires your approval of a proprietary procurement waiver to permit the purchase of a Minolta Paper Copier costing approximately \$8,200 and an expansion of the \$2,500 shelf-item limitation. A full justification for these waivers is contained in Annex H of the Project Paper.

The Project Review Meeting was held on August 13, 1980. All Project Issues were resolved at that time. There are presently no human rights issues in Malawi. The Project is included on Page 558 of the FY 1980 Congressional Presentation.

The responsible A.I.D. Officer in the field will be the A.I.D. Representative, Vivian Anderson, and the AID/W backstop officer will be Alfred Harding, AFK/DR/SAP.

Recommendation: That you sign the attached Project Authorization, thereby authorizing the Grant and the requested waivers and that you sign the attached IEE approving a negative environmental determination.

Attachments:

1. Project Authorization
2. IEE
3. Project Paper

Clearance:

DAA/AFR: WENorth	_____	Date:	_____
AAA/AFR/DP: RStacy	<i>[Signature]</i>	Date:	<u>8/22/80</u>
AFR/DP: JHicks	<i>[Signature]</i>	Date:	<u>8/22/80</u>
AFR/SA: MDagata	<i>[Signature]</i>	Date:	<u>8/22/80</u>
AFR/SA: RWrin	<i>[Signature]</i>	Date:	<u>8-21-80</u>
AFR/DR: NCohen	<i>[Signature]</i>	Date:	<u>8/22/80</u>
AFR/DR/ENGR: GHoover (draft)	_____	Date:	<u>8/22/80</u>
AFR/DR/EHR: WWaffle	<i>[Signature]</i>	Date:	<u>8/22/80</u>
COM/ALI: PHagan (draft)	_____	Date:	<u>8/22/80</u>
GC/AFR: NFrame	<i>[Signature]</i>	Date:	<u>8/22/80</u>
AFR/DR/SA: WWolff	_____	Date:	_____

D. Kline
AFR/DR/SA: DKline:agb:8/19/80:X28818

PROJECT AUTHORIZATION

Name of Country: Malawi
Name of Project: Polytechnic Engineering
Expansion
Number of Project: 612-0201

1. Pursuant to Sections 531 and 533 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Polytechnic Engineering Expansion Project for Malawi (the "Cooperating Country") involving planned obligations of not to exceed \$8,314,000 in grant funds over a five year period from date of authorization, subject to the availability of funds in accordance with the AID OYB/allotment process, to help in financing foreign exchange and local currency costs for the project.

2. The project will assist the Cooperating Country in expanding the University of Malawi's (UOM) Polytechnic College to provide an improved and expanded Malawian engineering workforce for the country's public and private sectors. This project will consist of the following: (1) expansion of physical infrastructure; (2) technical assistance; (3) commodities and equipment and (4) participant training.

3. The Project Agreement, which may be negotiated and executed by the officer 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 AID may deem appropriate.

4.A. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by AID under the project shall have their source and origin in the Cooperating Country or in countries included in AID Geographic Code 941, except as AID may otherwise agree in writing. Ocean shipping financed by AID under the project shall be financed only on flag vessels of the United States, except as AID may otherwise agree in writing.

B. Conditions Precedent

- (1) Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Cooperating Country shall furnish in form and substance satisfactory to AID, evidence from the

Ministry of Finance of the annual recurrent budget projections required to support recurrent costs associated with the total Polytechnic Expansion Plan, through 1987, including maintenance costs for the present and proposed new physical plant and equipment.

- (2) Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance architectural and engineering services and construction services, the Cooperating Country shall furnish in form and substance satisfactory to AID, relevant plans, specifications, schedules, contracting procedures, IFBS, and contracts.
- (3) Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance commodities, the Cooperating Country shall furnish in form and substance satisfactory to AID, commodity lists, specifications, IFBS, and contracts.
- (4) Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance the construction of the science laboratory, the Cooperating Country shall furnish in form and substance satisfactory to AID, a plan for disposal of any chemicals used in the laboratory.

C. Covenants

- (1) The Cooperating Country shall covenant to make available satisfactory housing for each technical assistance advisor prior to his or her arrival in Malawi.
- (2) The Cooperating Country shall covenant to nominate on a timely basis, subject to AID approval, Polytechnic candidates for long-term degree training in the United States, facilitate their processing for departure and upon completion of their training, assign such persons to positions and duties appropriate to their training at the Polytechnic Institute.
- (3) The Cooperating Country shall covenant to submit on a timely basis, in form and substance satisfactory to AID, the qualifications, duties, periods of performance and official requests for the technical

assistance teachers/lecturers required to support the Polytechnic engineering degree program.

- (4) The Cooperating Country shall covenant to provide in form and substance satisfactory to AID, a written policy statement, setting forth the short and long-range physical and academic goals and objectives of the Polytechnic Master Expansion Plan in general, and the new engineering degree program in particular. This Polytechnic Expansion Policy Statement should include, but not be limited to the following:
- (a) The new role of Polytechnic as a national center for technical data and its place within the University system.
 - (b) A plan for continually updating the engineering curriculum to meet Malawi's growing national development needs.
 - (c) A plan for upgrading the qualifications and functions of the Malawian staff and effective use and eventual phasing-out of the present expatriate staff.
 - (d) A plan for improving recruitment and selection of engineering students, including the encouragement of qualified female candidates.
 - (e) Establishment of a permanent engineering career guidance staff position at Polytechnic, filled initially by an appropriate technical assistance advisor.

D. Waivers

Based upon the justifications contained in Annex H of the Project Paper, and notwithstanding paragraph 4.A. above, I hereby:

- (1) Approve a procurement source/origin waiver from AID Geographic Code 941 (Selected Free World) to AID Geographic Code 935 (Special Free World) for the procurement of approximately \$300,000 of construction materials;
- (2) Certify that exclusion of procurement from Free World Countries other than the Cooperating Country and countries included in Code 941 would seriously

impede attainment of U.S. foreign policy objectives and objectives of the foreign assistance program; and

- (3) Approve a proprietary procurement waiver to permit procurement of a Minolta paper copier costing approximately \$8,200, and expand the \$2,500 shelf-item limitation to allow for local shelf-item procurement of this item.

Date: August 22, 1980

Goler T. Butcher
Goler T. Butcher
Assistant Administrator
for Africa

Clearances: As Shown on Action Memorandum

GC/AFR:NFrame:jlo:8/21/80

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT LOCATION : MALAWI
PROJECT TITLE : MALAWI POLYTECHNIC
FUNDING : \$4,363,000
LIFE OF PROJECT : FY 1979 - FY 1983
IEE PREPARED BY : OSARAC
ENVIRONMENTAL ACTION RECOMMENDED: NEGATIVE DETERMINATION
CONCURRENCE : TED D. MORSE, ACTING RDO *(Signature)*
DATE May 31, 1978
ASSISTANT ADMINISTRATORS DECISION :

Approved: *(Signature)*

Disapproved: _____

Date: August 22 1980

Clearance: AFR/DR/SDP: JHester *(Signature)* Date: 8/22/80

The purpose of this proposal is to expand and improve the institutional capability of the Polytechnic, University of Malawi in the field of engineering to produce 100 certificate, 75 diploma and 25 degree finishers annually by 1984.

The project will provide, (1) four U.S. technicians to assist the Polytechnic in developing its engineering programs; (2) participant training to future Polytechnic staff members; (3) in-service training to current staff members; (4) one classroom/laboratory science building; (5) one library building; (6) four senior staff houses, and (7) commodities such as science and library equipment, and library books.

The Polytechnic is situated just outside the center of Blantyre on the south side of Kamuzu Highway. It occupies a site of approximately 55 acres with a frontage 1,828 feet long. The land in the northern half of the site is gently sloping with the southern section falling more sharply away to the Naperi Stream which forms the southern boundary. There is a smaller site to the north of Kamuzu Highway, where the existing buildings are being used for secretarial courses.

The Polytechnic was constructed in 1965 and comprises the following:

- a group of linked two and three story buildings, consisting of administration and academic areas;
- two large workshop blocks;
- a smaller vehicle mechanics workshop, constructed at a later date;
- a maintenance workshop.

Site services include main water and sewage lines which traverse the site from East to West, and an electrical high tension line which runs overhead North/South to the west of the existing buildings.

All new building sites are presently undeveloped, overgrown with grass and some shrubs, on Polytechnic owned land. The buildings will be erected within the present campus boundary in accord with campus development plans. Landscaping will be carried out by the Polytechnic after building construction is completed. The project will not conflict with any present or future land use plans.

The development of the Polytechnic program will have little, if any impact on the socio-cultural system. Changes in traditional and cultural patterns are already underway in Malawi through the desire to be self-sufficient in a modern world. Polytechnic students have had extensive contact with the substance and structure of formal "Western" education. Thus, the additional schooling and training in the Polytechnic programs will involve only incremental changes in the modernizing of the students orientation and life style.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact
Identification
and
Evaluation 2/

Impact Areas and Sub-areas 1/

A. LAND USE

- | | |
|--|---------|
| 1. Changing the character of the land through: | |
| a. Increasing the population _____ | L _____ |
| b. Extracting natural resources _____ | L _____ |
| c. Land clearing _____ | L _____ |
| d. Changing soil character _____ | N _____ |
| 2. Altering natural defenses _____ | N _____ |
| 3. Foreclosing important uses _____ | N _____ |
| 4. Jeopardizing man or his works _____ | N _____ |
| 5. Traffic Access _____ | N _____ |
| 6. <u>Land Use Planning</u> _____ | L _____ |
| 7. <u>Scuatter, other development</u> _____ | N _____ |

B. WATER QUALITY

- | | |
|---|---------|
| 1. Physical state of water _____ | N _____ |
| 2. Chemical and biological states _____ | N _____ |
| 3. Ecological balance _____ | N _____ |
| 4. Other factors _____ | _____ |
| _____ | _____ |
| _____ | _____ |

1/ See Explanatory Notes for this form.

2/ Use the following symbols: N - No environmental impact
 L - Little environmental impact
 M - Moderate environmental impact
 H - High environmental impact
 U - Unknown environmental impact

IMPACT IDENTIFICATION AND EVALUATION FORM

C. ATMOSPHERIC

- | | | | |
|--------------------|-------|---|-------|
| 1. Air additives | ----- | N | ----- |
| 2. Air pollution | ----- | L | ----- |
| 3. Noise pollution | ----- | | ----- |
| 4. | | | |
| | ----- | | ----- |
| | ----- | | ----- |

D. NATURAL RESOURCES

- | | | | |
|--|-------|---|-------|
| 1. Diversion, altered use of water | ----- | N | ----- |
| 2. Irreversible, inefficient commitments | ----- | N | ----- |
| 3. Wildlife | | N | ----- |
| | ----- | | ----- |
| | ----- | | ----- |

E. CULTURAL

- | | | | |
|------------------------------------|-------|---|-------|
| 1. Altering physical symbols | ----- | N | ----- |
| 2. Dilution of cultural traditions | ----- | L | ----- |
| | ----- | | ----- |
| | ----- | | ----- |

F. SOCIOECONOMIC

- | | | | |
|--|-------|---|-------|
| 1. Changes in economic/employment patterns | ----- | L | ----- |
| 2. Changes in population | ----- | N | ----- |
| 3. Changes in cultural patterns | ----- | L | ----- |
| | ----- | | ----- |
| | ----- | | ----- |

IMPACT IDENTIFICATION AND EVALUATION FORM

G. HEALTH

- | | |
|--|-------|
| 1. Changing a natural environment_____ | N |
| 2. Eliminating an ecosystem element_____ | N |
| 3. New pathways for disease vectors | N |
| 4. <u>Safety provisions</u> | L |
| _____ | _____ |

H. GENERAL

- | | |
|--------------------------------|-------|
| 1. International impacts_____ | N |
| 2. Controversial impacts_____ | N |
| 3. Larger program impacts_____ | N |
| 4. Aesthetics | L |
| _____ | _____ |
| _____ | _____ |

I. OTHER POSSIBLE IMPACTS (not listed above)

_____	_____
<u>See attached Discussion</u>	_____
_____	_____

PROJECT PAPER
MALAWI POLYTECHNIC ENGINEERING EXPANSION

GRANT PROPOSAL
AID PROJECT NO. 612-0201

JUNE 1980

Design Team:

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Hillis D. Davis	- L. Berger
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Contributors:

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- I. FAA Sec. 611 (e) Certification
- J. Statutory Check List
- K. PID Approval Cable
- L. GOM Request for Assistance

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET	1. TRANSACTION CODE <div style="border: 1px solid black; display: inline-block; padding: 2px;">A</div> A ADD C CHANGE D DELETE	PP <hr/> 2. DOCUMENT CODE 3
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3. COUNTRY/ENTITY MALAWI	4. DOCUMENT REVISION NUMBER <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block;"></div>
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5. PROJECT NUMBER (7 digits) <div style="border: 1px solid black; padding: 2px;">612-0201</div>	6. BUREAU/OFFICE A. SYMBOL AFR B. CODE <div style="border: 1px solid black; padding: 2px;">06</div>	7. PROJECT TITLE (Maximum 40 characters) <div style="border: 1px solid black; padding: 2px;">MALAWI POLYTECHNIC ENGINEERING EXPANSION</div>
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8. ESTIMATED FY OF PROJECT COMPLETION FY <div style="border: 1px solid black; padding: 2px;">84</div>	9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <div style="border: 1px solid black; padding: 2px;">80</div> B. QUARTER <div style="border: 1px solid black; padding: 2px;">4</div> C. FINAL FY <div style="border: 1px solid black; padding: 2px;">84</div> (Enter 1, 2, 3 or 4)
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10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) -						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT)	1,000	500	1,500	5,892	2,422	8,314
(LOAN)						
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST COUNTRY		1,412	1,412		11,304	11,304
OTHER DONOR(S)						
TOTALS	1,000	1,912	2,912	5,892	13,726	19,618

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>80</u>		H. 2ND FY <u>81</u>		K. 3RD FY <u>82</u>	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) EH	691	700		1,500		2,010		2,627	
(2)									
(3)									
(4)									
TOTALS									

A. APPROPRIATION	N. 3TH FY <u>83</u>		O. 5TH FY <u>84</u>		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED
	D. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1)	1,182		995		8,314		<div style="border: 1px solid black; padding: 5px; display: inline-block;"> MM YY 05 83 </div>
(2)							
(3)							
(4)							
TOTALS							

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1 1 = NO
 2 = YES

14. ORIGINATING OFFICE CLEARANCE SIGNATURE TITLE Vivian L. C. Anderson AAO, USAID/Malawi	15. DATE DOCUMENT RECEIVED IN AID/W. OR FOR AID/W DOCUMENTS. DATE OF DISTRIBUTION DATE SIGNED <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">MM</div> <div style="border: 1px solid black; padding: 2px;">DD</div> <div style="border: 1px solid black; padding: 2px;">YY</div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; padding: 2px;">MM</div> <div style="border: 1px solid black; padding: 2px;">DD</div> <div style="border: 1px solid black; padding: 2px;">YY</div> </div>
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I. Summary and Recommendations

A. Face Sheet. A summary of the proposed project's fiscal data is presented on the preceding Face Sheet.

B. Recommendations. The USAID Affairs Office recommends that AID/W authorize a grant totaling U.S. \$8.314 million from the Education and Human Resources funding category. The grant will help achieve the project summarized in this document. Other donors participating in project related activities are the British Overseas Development Agency (ODA), whose assistance will approximate U.S. \$2 million, the European Development Fund (EDF) with about U.S. \$895,335 and the African Development Fund (ADF), which plans to contribute U.S. \$5.8 million. The project will be administered under the direction of the Government of Malawi (GOM), whose contribution will total U.S. \$11.3 million. Total project cost is equal to U.S. \$19.6 million. Total expansion costs, to which this project contributes, is about U.S. \$28.3 million.

1. Goal

Activities initiated under the proposed project will help the GOM advance the number of skilled technical Malawians involved in the country's rural and urban development.

2. Purpose

As a result of the activities designed in this document, the proposed project will help the University of Malawi's (UOM) Polytechnic College provide an improved and expanded Malawian engineering workforce to the country's public and private sectors.

3. Outputs

At the end of this project, the UOM's Polytechnic College will be a source of viable, skilled engineers for the GOM's National Rural Development Program. The Polytechnic College's institutional services and abilities will be expanded and improved under this project to include:

a. Physical facilities to adequately train and graduate annually 100 engineering technicians, 75 sub-professional engineering diplomates and 25 professional degreed engineers;

1. A 26,000 sq. ft. library with seating for 450 readers and space for 90,000 volumes of books.

2. 20 fully equipped and operating science/engineering teaching and testing laboratories, 13 (18,000 sq. ft.) of which are added by this project.

3. Four senior staff houses.

b. An administrative staff capable of effectively implementing the expanded engineering program;

1. 60 qualified teachers and administrators, 66% of whom are Malawian, and 33% of whom have post graduate degrees, 16 having earned degrees under this project.

c. Curricula, training methods, and educational aids appropriate for educating 100 technicians, 75 diplomates, and 25 engineers, each year, are needed in the public and private sectors;

In summary, the following outputs will exist at the end of this project:

- Polytechnic graduates qualified to perform engineering services in public and private employment.

- Polytechnic recognized as a technical resource to the engineering community.

- Sufficiently qualified faculty (optimizing Malawi personnel), capable of teaching the expanded engineering program and providing consulting services to the engineering community.

- A curriculum appropriate to adequately prepare Polytechnic graduates for employment and advance study.

- Physical facilities sufficient to;

(a) annually train 100 technicians, 75 diplomates, and 25 engineers and

(b) provide consulting services to the engineering community.

- An administrative structure at Polytechnic capable of effectively implementing the expanded engineering program.

4. Inputs

In support of project activities listed below, AID will provide:

— For the new library, approximately 26,000 sq. ft. will be constructed which will include space for adding a computer teaching center and a media learning center. Furnishings and

equipment for the library will be purchased locally except for a plain paper copier, which will be purchased from Japan. Books, shelving and file cabinets will be procured from the U.S.

-	Construction:	\$2,111,616
-	Local Procurement:	59,555
-	Off-Shore Procurement:	<u>121,684</u>
	Sub-total	\$2,292,855

— For the new Science Laboratories Building, about 18,000 sq. ft. of building will be constructed and will have space for the laboratories and facilities related to chemistry, biology, physics, electrical science, electronics and electronic listening and measuring apparatus for operating the new facilities.

-	Construction:	\$1,306,368
-	Off-Shore Procurement:	<u>274,243</u>
	Sub-total	\$1,580,611

— For the four new Staff House, approximately 6,800 sq. ft. (or 1,700 sq. ft. per house) will be constructed and equipped with furniture and appliances. These houses will be used, at first, by AID funded senior technical assistance advisors.

-	Construction:	\$ 293,760
-	Appliances and Furniture:	<u>40,000</u>
	Sub-total	\$ 333,760

— In support of construction activities being funded under this project, an Architectural and Engineering (A&E) firm will be selected by the GOM and approved by AID. The A&E firm will require about 7 months time to prepare the final design, drawings, plans, and construction cost estimates and documents for bids.

Sub-total \$ 206,208

— In support of efforts to increase the number of Malawian instructors on the Polytechnic staff, and to improve their instruction, this project will make available appropriate participant degree training to 16 Malawians. Approximately 55 person-years, at an average cost of \$29,000 per person year has been included in the project's budget. The average length of training will be 4 years. Twelve of the sixteen Malawians are currently staff associates who serve as tutors and teaching assistants in four engineering disciplines. Three staff instructors, two of whom are women, will acquire master's degrees and one senior staff member will study for a PH.D in hydrology (this is an area of expertise in which there are new teaching and technological developments, as well as increasing demands from the GOM to develop

Malawi's hydroelectric potential). The sixteenth candidate will be selected and will counterpart a career guidance and industrial liaison counselor provided during the project by AID technical assistance.

Sub-total \$1,595,000

— Technical Assistance is provided under the project because the Polytechnic lacks sufficient instructors with adequate qualifications. This assistance consists of five persons, serving an average of 2.6 years, totalling 13 person years. In addition to teaching, they will assist the Principal and Department Heads in reviewing, assessing and modifying the existing curriculum. Three of these engineer/educators will have experience in industry as well as in curricula development. Computer-assisted teaching experience is also desired. One of the educators will be a Career Guidance/Industrial Liaison Counsellor, experienced in the engineering training field. He/she will select and train a Malawian counterpart, serve on the Curriculum Development Committee and help complete the development of a system to track and record the Polytechnic's engineering graduates through their future employment experiences. This will aid the Polytechnic administrators in the continued refinement of curriculum, syllabuses, course materials and methods of course materials and methods of instruction, giving the program greater relevancy to Malawi's overall development needs.

These positions are as follows:

1.	Senior teacher in Civil Engineering and Management - (2 years/11 months)	491,458
2.	Senior teacher in Electrical/Electronics Engineering - (2 years/11 months)	491,458
3.	Senior teacher in Electrical/Electronics Engineering - (1 year)	168,500
4.	Senior teacher in Mechanical Engineering (2 years/11 months)	491,458
5.	Senior Career Counsellor (2 years/11 months)	<u>491,458</u>
	(Total time) (12 years/8 months)	
	Sub-total	\$2,134,332

The following table provides a summary of all project inputs.

A.I.D.	Project Expenditures					
	FY 80	FY 81	FY 82	FY 83	FY 84	Total
-- Technical Assistance	--	134	560	558	508	1,760
-- Equipment and Commodities	--	292	--	--	--	292
-- Construction (including local costs)	938	797	682	--	--	2,417
-- Participant Training	48	256	344	344	388	1,280
-- Project Evaluation	--	17	--	47	--	64
-- Contingency and Inflation	514	514	1,041	233	299	2,501
Sub-total	1,500	2,010	2,627	1,182	995	8,314
G.O.M.						
-- Technical Assistance	--	--	--	500	500	1,000
-- Construction	400	--	--	--	--	400
-- Participant Training	--	--	52	51	51	154
-- Projected Recurrent Cost	1,012	1,366	1,821	2,404	3,147	9,750
Sub-total	1,412	1,366	1,872	2,955	3,698	11,304
Total Project Costs	2,912	3,366	4,500	4,137	4,693	19,618

Footnotes:

1. Contingency and inflation were calculated as follows

- 41% of annual Construction costs added to
- 20% of annual Participant Training and Technical Assistance Costs, plus
- 35% of the Commodity and Equipment Costs. A more detailed breakdown is available in Annexes B through F.

2. Projected Recurrent Costs for host government contribution is based on figures submitted to the PP team in 1978 by the Vice Chancellor of the Polytechnic. He indicated that the average annual costs of a university student in Malawi is approximately K 3,200 per year, per student (U.S. \$4,000). Applied to this project, this figure is conservative since it does not include the expenses of the new engineering degree course expansion. See Section D for a more comprehensive discussion of recurring costs.

5. Waivers

A Proprietary Procurement Waiver and an expansion of the \$2,500 shelf item limitation is requested to locally purchase, from a 935 Geographic Source/Origin, one plain copier at the cost of approximately \$8,200. A source/origin waiver is also requested to purchase from 935 Geographic countries, up to \$300,000 in construction materials.

6. Strategy

Malawi's development policies emphasize improvement in the economic status of the rural smallholders, and the need to provide trained manpower for specific development programs. Despite the priority the GOM has given to rural development, without a skilled indigenous technological ability, all aspects of development and economic progress risk being ephemeral. In the immediate future, technical manpower requirements can be met by foreign assistance. Over a longer period of time, however, Malawi will need to acquire its own technological and administrative capability.

In view of this requirement, the AID Country Development Strategy Statement (CDSS) states that a "long term goal is to improve institution building in Malawi and produce appropriately skilled manpower for institutions". A means for achieving this strategy is, in part, to invest in appropriate projects in areas of education and human resource development. This project embraces both the formal and non-formal avenues of human resources development. It is designed to accommodate the low, middle and high levels of technical skills required in Malawi's private and public sectors. The success (or failure) of this project to improve and expand technically trained Malawians will depend directly on the general approach applied when planning, organizing, and administering the project's various activities. The GOM and the University of Malawi are strongly committed to the project. Funds have already been budgeted and certain courses have been improved to better adapt the engineering degree to actual problems and requirements in Malawi. According to a World Bank Survey of Malawi's education sector, "the planned increase in enrollments at the University and the Polytechnic should provide sufficient number of professional personnel to meet most of the country's manpower needs."

7. Issues

This project was first proposed in July 1978 and, as a Project Identification Document (PID), was approved in August 1978. The PID stipulated that a manpower survey of Malawi's engineering needs be completed and approved before preparation of the Project Paper (PP) document. As a result, Louis Berger International, Inc. was contracted under an Indefinite Quantity Contract to complete an on-site survey of the existing and future engineering services, supply and demand in Malawi. From November to December 1978, a team from Louis Berger International, Inc. conducted a survey in Malawi and submitted in January 1979 to USAID/Malawi and AID/W a report presenting the results of its study. The report, An Engineering Manpower Survey of Malawi, was approved in March, 1979. This report states that "the team has found

that an expansion program at the Polytechnic Institute is fully justified on the basis of current and projected engineering/technical needs and believes that failure to expand the Polytechnic at this time will have a serious and long-lasting negative effect upon the balanced agro-oriented development necessary for Malawi."

In July 1979, a project design team was formed. This team completed in Malawi, during the months of August and September 1979, a project paper which was submitted to AID/W in October 1979. Since its submission to AID/W, however, the PP has been subject to a number of revisions. From October to December 1979, several changes were made to AID's list of inputs which were subsequently eliminated or picked up by other donors.

From January to May 1980, the PP was under revision by a working Project Committee, primarily by the Committee's Engineer and Project Design Officer. A major concern was the need to update construction and commodity prices used in the PP's Technical Analysis. Also an issue was the computation of recurrent costs, the confirmation of project implementation time schedules, and the precise nature of other donor commitments to project related activities.

In June 1980, a new Project Committee was formed and met to determine what remained to be completed in the PP for its final presentation to a Project Review Committee. This Committee raised three essential issues. First, the Social Scoundness Analysis needed to include a more clear explanation of the project's ultimate contribution to Malawi's rural development requirements. This section of the PP also required an explanation of the relationship of the project's direct or indirect benefits to women. A second issue was the need to refine the PP's Procurement Plan and Implementation Schedule. The third issue raised by the committee is one of the basic policy, i.e., does this type of project investment conform to AID's Congressional Mandate of assisting the poor majority who live primarily in the rural areas of Malawi? The assistance of several members of the project committee and from the original PP design team, the revised PP advanced in this document has been edited and, where appropriate, amended to address the above issues and present this project for authorization.

8. Beneficiaries

Scarce supplies of technically skilled labor in Malawi is the most significant obstacle to efforts promoting equitable economic and social development. At present, the demand on the part of the GOM and the private sector, for appropriately trained engineering talent, exceeds greatly the country's indigenous supply. The increased rate of rural development is creating new demands for engineering skills but not enough new graduates are entering the market. Instead, the GOM and most private companies continue to rely heavily on expatriates whose costs exceed greatly the expense of similar, but scarce, local labor.

As a result of this project's implementation, a number of beneficiaries will benefit directly and indirectly from the increased supply of engineering talent. By 1983, when the first engineers graduate from the Polytechnic, the most urgent need for their services will be in building Malawi's infrastructure, in particular, rural road project networks, water and sewage projects, irrigation and hydro-power, rural electrification and low-income housing. These projects are directly related to improving the living standards of Malawi's estimated 5 million poor people located in rural areas of the country. Increased numbers of Malawian engineers will also benefit from the expansion of projects in the private sector, many of which are being postponed because of the expenses of expatriate labor. Increased employment of Malawian technicians will also affect directly the productivity of Malawi's important agro-businesses.

The most direct beneficiaries of this project are the individuals completing the new technician's and engineer's training, the public and private employers of these engineering specialists, and the individuals and entities requiring engineering services and research. At the end of this project, the University of Malawi will also benefit from the Polytechnic's ability to provide, as a full degree awarding college, an engineering output relevant to Malawi's long-range needs.

9. Environmental Impact

According to the impact evaluation and initial examination, the proposed activities will not have significant effects on either the physical or social environment. It is therefore recommended that a negative determination is appropriate as the threshold decision, and thus, no further environmental action is required.

C. Description of the Project

1. Background

In 1979, Malawi had a per capita Gross National Product (GNP) of \$180, placing it on the United Nation's list of the World's 31 poorest nations. Nevertheless, the country has achieved remarkable progress since its independence in 1964. Between 1964 and 1976, the Gross Domestic Product (GDP) grew at constant prices, by an average annual rate of 6.5 per cent. More recently, per capita GDP has increased annually at constant prices by an average 6.2%.

Agricultural production accounts for about 45 per cent of GDP. More than 85 per cent of agricultural outputs comes from small farmers producing on a plot averaging 1.5 hectares per household. Malawi's major assets are: its industrious population, most of whom are in agriculture; the country's moderately fertile soils; adequate water resources; and the favorable climate. Other resources include fish farming from Lake Malawi (Africa's third largest lake), pulp from vast softwood forestry estates, and substantial hydro-electric potential. Unlike its neighbors, Malawi does not have any significantly known

mineral resources. With abundant, but unskilled labor, Malawi has been a source of migrant workers for Zimbabwe and South Africa. At its peak in 1973, there were according to official statistics, 123,000 Malawians under contract to work in South African mines. Most of these migrant workers have, more recently, returned to Malawi. By 1977 only 17,000 workers were registered to work in South Africa. As a result, remittances, which were about \$40 million or 31 per cent of export earnings in 1974, fell to about \$9 million or 4% of export earnings in 1977. Since neither South Africa nor Malawi are likely to encourage a substantial expansion of migrant labor from Malawi to South Africa, the surplus of 100,000 or more workers returned from South Africa must be absorbed by the domestic economy.

In the past, increased employment opportunities was the most impressive aspect of Malawi's overall economic performance. Between 1969 and 1977, total modern sector employment increased by 88 per cent and agricultural related employment grew by 177 per cent. According to the CDSS for Malawi, elasticities of labor with respect to real output are extremely high, indicating that growth occurred through the use of labor-intensive techniques. However, the CDSS also states that the additional demand being placed on limited land resources by an ever increasing population (3.1 per cent annually) can only be met by increased employment, primarily in the modern sector of the economy. The GOM emphasizes development in the rural areas, with special attention to the smallholder farmer. As a result, urban migration in Malawi has not been as significant as in other developing countries. But the GOM's ability to contain the rural population, especially the landless agricultural labor, is unlikely to continue as the population inevitably increases.

A National Rural Development Program (NRDP) was inaugurated in 1977 by the GOM in order to spread more quickly the benefits of rural development. The NRDP is a well defined, intensive development extension program that aims at providing equitably more goods and services to rural Malawians. Its major objectives are to:

- "Increase the general level of Malawian smallholder production, in particular, to increase the production of cash crops for export and to feed the growing urban population;
- Provide infrastructure such as road, storage facilities, markets, health facilities, schools, and water;
- Improve land, including consolidation and irrigation;
- Establish credit facilities for agricultural implements fertilizers, seeds, insecticides and oxen;
- Provide inputs and services necessary to allow smallholder production increases; with particular emphasis on productivity per unit area; and
- Preserve natural resources by:

1. Encouraging high standards of crop husbandry combined with soil conservation;
2. Conserving watershed area...; and
3. Maintaining forests through the replanting of trees in reserves and on customary and estate land. 1/

Programs and projects developed to achieve these objectives require a sufficient supply of middle and upper level technically skilled labor. The shortage of skilled and educated manpower has had adverse consequences for national development in both the modern sector, where skills are directly in demand, and in the traditional sector, where skilled personnel are needed to instruct smallholder farmers and others in techniques which will raise rural productivity and incomes. To a considerable extent, manpower shortages in the modern sector have been reduced through the expensive use of expatriate manpower, who now constitute up to 75% of the high level manpower employed in the country. The output of locally trained vocational and technical personnel is far short of the demands of steadily growing commercial industrial and agricultural sectors.

Internal and external manpower surveys have confirmed the continuing need for, and insufficient supply of better trained engineering technicians and qualified engineers. Two studies conducted by the GOM documented the skilled manpower shortages in general and specifically the critical shortage of engineers. These surveys also disclosed that the high demand and short supply of professional and sub-professional engineers resulted in not only the expensive and undersirable dependence on expatriate personnel but also the expensive and undersirable number of Malawian scholars sent aboard for skills training not available in Malawi.

In 1971, Malawi made its first general Manpower Survey. The mail survey was designed to gain as comprehensive a picture as possible of the existing employment situation with the High and Intermediate Level Manpower (HILMP) groups. Results of the 1971 survey verified the critical shortage of skilled labor in the public sector. Most of the shortage was found to be in the science/mathematics based occupations. The survey also discussed the fact that a large percentage of the higher level and more skilled professional jobs were held by expatriates (10-74%). The 1971 survey is currently being updated by GOM, and expanded by the World Bank and should be available in Mid-1980.

In 1974, the Economic Planning Division of GOM also conducted a study entitled "Demand and Supply of Engineers and Engineering Technicians" in Malawi. This study was based on the earlier 1971 survey and was designed to focus more specifically on the demand and supply aspects of the engineering profession, because of the apparent critical manpower shortage existing in that group.

1/ Source: Malawi National Rural Development Policies, Strategy, and General Feature, Zomba, 1978, page 47-48.

In 1979, USAID funded a "Malawi Engineering Manpower Survey". That survey was conducted by structured interviews with a wide cross-section of managers in government, parastatal and private organizations. The survey confirmed the GOM conclusions projecting a continuing shortage of engineering talent during the next 10 years. The AID survey showed that present demand is greatest for civil engineers. As Malawian infrastructure is put into place, demand for civil engineers will level off, while the demand for mechanical and electrical/electronic engineers, and technicians will increase. This will result from the expansion of the modern secondary industries which must handle the increased agricultural productivity of the small farmer.

2. Detailed Description

In response to the various levels of manpower requirements facing both short and long-term development in Malawi's public and private sectors, the GOM is endeavoring to expand existing training for technical occupations at all levels. Technical training is conducted at five technical schools, including the Polytechnic (which is one of the University of Malawi's three constituent colleges). Established in 1965 with assistance from A.I.D., the Polytechnic is the main center for technical education at the tertiary level.

The Polytechnic originated in the early 1960's with the then Nyasaland Government's high priority requirement for a comprehensive school to provide courses in practical vocational, technical and commercial skills, as well as in adult education. In 1962, AID authorized a grant of \$3.1 million to assist in; (a) the construction of the present buildings; (b) supplying furniture and equipment, (c) providing scholarships in the U.S. and (d) technical assistance from the University of Southern California (USC).

The educational program that was developed provided courses in the building trades, auto mechanics, sub-professional engineering, businesses and commercial studies, the latter being a basis for more advanced professional and academic training abroad. Originally, Polytechnic had two purposes, first, to offer full-time courses in commercial and mechanical subjects and second, to offer part-time courses in various subjects, including apprentices' training and evening adult classes for those already employed. It was always envisaged that the Polytechnic should offer technical education at the highest possible level, appropriate to the needs of the country and to the educational attainment of its potential enrollment.

The teaching of all courses is the responsibility of the four departments of the College, namely: the Department of Business Studies and the Department of English and Liberal Studies - represented on the University Senate by the School of Business and Liberal Studies, and the Department of Engineering and the Department of Mathematics and Science - represented on the Senate by the School of Technology. Student intake, in keeping with the rapid expansion of the economy over the last fifteen years has increased dramatically. In 1978/79 there were 318 students following University courses and 702 following non-University courses and this will rise again

this year. In addition, there are 2,400 students attending regular evening classes. To cater for the needs of the full-time students there are 98 teaching staff and 241 Senior Administrative, Clerical and Technical Staff.

The present GOM development strategy is to further expand the Polytechnic to provide improved training at the certificate and diploma levels in support of and to make possible professional degree courses in Engineering and Accountancy.

Plans are now well advanced for the start of the degree courses in September 1980. It will consist of three years of full-time study end-on to the existing three year diploma in all a six-year course starting at MCE level. Entry will be restricted to about 25 of the best students from the Diploma Course, but special provisions will be made for students with A levels and for some students from industry with several years of industrial experience. It will be a general degree based on elements of civil, mechanical and electrical engineering which will give students a large measure of flexibility in selecting future employment.

Courses for the first year of both streams of technician engineers and also the technical teachers are common, so any student entering the engineering course has a chance of getting a place on the degree program. The total period of six years' attendance at the Polytechnic will be interspersed with periods in industry so that the student has an opportunity to become familiar with industrial conditions and processes. Prospective employers will also have an opportunity to judge a student's suitability for a particular post.

Students working for the Diploma take a three year full-time course in general principles of engineering based on a sound knowledge of Mathematics and Science. Academic study is supported by work in the engineering laboratories. All students are given an introduction to workshop practice and engineering design. In addition students are attached to an engineering organization for three months during the course to give them an insight into how industry functions. During this attachment they work alongside craftsmen and in various offices concerned with design, planning, store procedures, purchasing and sales, or in the case of civil engineering firms either in a design office or on a construction site. Students taking courses leading to the award of Diploma in Technical Teaching follow a predominantly engineering course but with an emphasis on skills in woodwork, metalwork, drawing and teaching methods.

Entry requirement for the Diploma demands a good MCE with credits in English, Mathematics and Science.

Syllabus Outline

Year One Diploma Communication Studies, Mathematics, Drawing, Workshop Practice and Technology, Mechanical Science, Electrical Science, Physical Science, Industrial Studies and Complementary Studies:

Year Two Diploma	Communication Studies, Mathematics, Drawing, Workshop Practice-Machine Shop and Technology, Motor Vehicle Shop, Supervision, Mechanical Technology, Electrical Technology, Construction Technology, Engineering Materials, Complementary Studies.
Year Three Diploma	Communication Studies, Mathematics, Drawing, Supervision, Mechanical Technology, Electrical Technology, Construction Technology, Engineering Materials, Fluid Mechanics and Thermodynamics, Complementary Studies.

Other Courses

Non-University students, under the Board of Governors can follow technician, telecommunications or printing courses. Technician students follow full-time courses for one year and are then apprenticed by the Ministry of Labor to engineering organizations. They return to the Polytechnic for six months further study in each of the following three years. These students will specialize in mechanical, electrical, motor vehicle or building technology. They are technician engineers like the Diploma students, but whereas the Diploma students are given a very general engineering training with a bias towards supervision, technicians specialise in a particular technology and can look forward to a leading position in that technology. Telecommunications and Printing students follow two-year courses on a "sandwich" basis. These students are already employed by Malawi Post and Telecommunications, Malawi Police, Malawi Railways etc., or the various printing, publishing and advertising agencies in the country. The aim of these courses is to develop theoretical knowledge and practical skills in their areas of specialization. All these groups prepare for the City and Guilds of London Institute examinations.

At present, demand outstrips the supply of engineers in Malawi, and as a consequence, there are excellent employment prospects in all sectors of industry.

A. Physical Expansion of the Polytechnic

In 1977, the University of Malawi and the Polytechnic Commissioned the local architectural and engineering (A&E) consulting firm of Norman and Dawbarn to design a Master Expansion Plan for the Polytechnic. This plan established an engineering and planning feasibility of the expansion of physical facilities needed in support of the proposed new degree programs and subsequently increased enrollment. The basic plan, design, and lay-out of the proposed campus construction will serve as a framework for the school's physical expansion, but may be modified during the final A&E design.

The staged construction will include the following:

- (1) construction of a new library, science lab block, cafeteria, student union, dispensary and 4 residence halls.
- (2) conversion of the existing teaching buildings to relocate the existing library and cafeteria, and replace inadequate science labs with additional classrooms and drawing offices.
- (3) conversion of two existing workshop buildings for use by the mechanical and civil engineering departments.
- (4) construction of 50 additional off-campus staff houses.
- (5) construction of on-campus sports facilities.

B. AID Project Construction Components

Under the proposed project, AID will finance and build the following new structures as the capital construction component of its present assistance package:

- (1) A 26,000 sq. ft. library
- (2) An 18,000 sq. ft. multiscience laboratories building
- (3) Four, 3-bedroom senior staff houses

Funds and commitments have been made by three other donors to complement and complete the GOM's master Expansion Plan for Polytechnic. The need for additional facilities and space at Polytechnic has become critical for the present enrollment and is inadequate for the expected new degree programs and their future increased enrollments. Part of the administration building has had to be used as a less than adequate library and cafeteria. Upon completion of the new library (by AID) and the cafeteria (by the British), these areas will be reconverted back to much needed classroom space. The new science building will add 13 new laboratories for chemistry, physics, telecommunications and electronics. The senior staff houses are to support the technical assistance lectures/advisors being provided by AID.

There are several large construction and A&E firms in Malawi that can qualify and are capable of undertaking work of this magnitude. These firms are locally registered and form an integral part of the Malawi economy, e.g. major shareholders are permanent residents of Malawi but not necessarily citizens. Previous AID experience in Malawi indicates that:

- These firms are capable of competitively undertaking a project of this size;

- The quality of construction work is considered excellent.
- An appropriate and adequate labor force for the proposed construction is readily available in the Blantyre site area.
- Commodity suppliers, construction contractors and project implementation officials are alert to, and plan for, the significant delays experienced in the past because of Malawi's landlocked location and the extreme congestion, damage and pilferage of surface-shipped commodities at the two distant sea ports of entry in Mozambique.

However it is proposed to seek technical proposals first in those countries in the AID Geographic Code 941 and in Malawi. Should this approach not result in a contract, then a waiver will be sought in order to secure A & E services from Code 935 countries.

The firm selected for the design of the facilities will report to the GOM, however REDSO/EA will exercise normal project monitoring responsibilities and will certify progress payments. Construction services will also be sought first in code 941 countries and Malawi. In the event that no qualified contractors should respond, a waiver will be sought to obtain such services in code 935 countries.

The GOM proposes to use its own mechanisms and methods for supervision of construction utilizing personnel from their own or retained by them for this purpose. REDSO/EA will review these procedures and certify that these methods are acceptable to AID. REDSO/EA will in addition exercise normal monitoring responsibilities and will certify progress payments until completion of the project.

C. AID Project Education Components

The quality and effectiveness of the engineering program being developed at the Polytechnic will depend to a great degree on several major factors: supervision and management; curricula; relationships with employers of the graduating students; evaluation of student progress in class and on the job; and, most important, the caliber of the school's staff. At present, full-time study at the Polytechnic is supplemented during the vacation periods by industrial exposure, aimed at giving students practical experience. However, because the demand for engineering talent outstrips the supply, the Polytechnic will be unable to attract, in the immediate future, a sufficient number of experienced people. Consequently, initial development of the engineering degree program will require the use of expatriate personnel. At the same time, Malawians trained under the program will be given the opportunity to advance their experience as counterparts and subsequently assume the responsibilities of the expatriate personnel.

Since the Polytechnic lacks sufficient, experienced personnel, AID will provide technical assistance in the form of five persons. In addition to providing classroom instruction, these professionals will assist the Principal and Department chairpeople in reviewing, assessing and, when necessary, modifying the school's existing curriculum. A total of 13 person years of technical assistance has been included in this project as follows:

- | | | |
|----|---|--------------------------|
| 1. | Senior teacher in Civil Engineering
and Management | 2 years/11 months |
| 2. | Senior teacher in Electrical/
Electronics Engineering | 2 years/11 months |
| 3. | Senior teacher in Eleectrical/
Electronics Engineering | 1 years |
| 4. | Senior teacher in Mechanical
Engineering | 2 years/11 months |
| 5. | Senior Career Counsellor | <u>2 years/11 months</u> |
| | | 12 years/ 8 months |

Three of the technical assistants (TA's) will have a practical background in industry and have applied this experience to the development of curriculum and teaching materials. All five of the technical assistants will have used basic computer applications in their teaching experiences. One of the TA's will be a Career Guidance Counselor with a background as an Industrial Liaison counseling for industries requiring engineering talent. This person will also help select and train a Malawian counterpart, who will serve on the Polytechnic's Curriculum Development Committee. Both the TA, acting as a Career Guidance Counselor, and his or her Malawian counterpart will help establish a system for evaluating the post-graduate employment experiences of Polytechnic engineering graduates. This system will be incorporated into the continued efforts of the Curriculum Development Committee.

In response to the GOM's policy to improve and "localize" the Polytechnic staff, 16 Malawian instructors will receive appropriate degree training. These instructors will also benefit, upon their return from advanced training in the U.S., from adequate on-the-job experience with their counterpart expatriates, some of whom are being provided by this project. Of the 16 Malawians that will attend American colleges and universities, under this project, twelve are presently staff associates who serve as tutors and teaching assistants in four engineering disciplines. They are part of the university's teacher recruitment and training program.

Two staff instructors who are women, will acquire Master's degrees. A senior staff member will study for a PH.D in hydrology. The sixteenth participant trainee, once selected, will be the counterpart to the project's career guidance counselor. Annex C provides a schedule for the participant's training program.

An institution will be contracted for under the project. This institution will provide both technical assistance and participant training.

II. Project Analyses

A. Social Analysis

This project will contribute directly to the GOM's major objectives to raise the standard of living of the country's population by improving agriculture and encouraging balanced regional development. As a result of this project, the Polytechnic will be able to provide both the private and public sectors technically trained labor, critically needed for development programs.

Since independence in 1964, the GOM has focused primarily on raising the population's standard of living by directing public expenditures towards the productive sector, mainly towards agriculture. Consequently, Malawians witnessed remarkable economic growth over the past decade, but on the other hand, were not able to provide sufficiently skilled labor to the growing economy. Because the rate of expansion in education had not kept pace with the needs of Malawi's growing productive sectors, about 75 per cent of high level posts were occupied by expatriate personnel.

Aware of these inadequacies, the GOM, with the assistance of bilateral and international agencies, has been taking steps to improve and expand education at all levels. The World Bank has financed three educational projects involving primary, secondary and teacher training, as well as higher education. Future IDA financing is expected to focus on expanding secondary education and teacher training, while reinforcing the administrative structure of education. Other agencies such as the ODA (U.K), E.E.C. and A.D.F. are providing support in technical and higher education. Overall GOM development expenditure have taken a significant turn in favor of social services as the need for trained manpower resources is now becoming critical to the success of the country's development plans. The GOM has adopted a strategy for formal education which includes inter-alia, expanding and improving primary schools through programs of text book provision, school construction and expansion; assistance to villages for the construction of schools by self-help, and increasing the output of technical schools, agricultural colleges, the apprenticeship program and the University of Malawi to meet the increasing demands for professional and technical manpower. The project under consideration falls within the above strategy.

The proposed project is AID's fourth effort to address the problem of limited skilled manpower and agricultural development through institution building. The first effort was a \$3.1 million grant in 1962 to assist in building the present Polytechnic. The second was a \$4.1 million grant in 1975 to expand and improve the Bunda College of Agriculture near the capital city of Lilongwe. The third effort was a \$9 million grant in 1979 for an Agriculture Research and Extension Project to the GOM's National Rural Development Program. Although the project proposed in this document does not, strictly speaking, contribute directly to the rural poor in Malawi, it follows past AID investments in strengthening institutional ties and contributions to rural development. In addition, this project will help the GOM provide an education that is more appropriate to the country's social and economic priorities (see telegrams comprising Annex K).

While the graduates from the Polytechnic may work in relatively specialized and modern settings, their activities will contribute to improving the livelihood of the rural majority in a number of ways. Most important will be their contributions to increasing and diversifying agricultural production. Malawi has embarked upon an ambitious and creative plan to transform traditional agriculture. The GOM consolidates and resettles farming families on Integrated Agricultural Development

Schemes (IADS) which are strategically located throughout the country in terms of their access to quality soil, adequate water supplies, and effective transport routes. At present, there are three such schemes serving almost 120,000 farming families, and plans exist to create more schemes to serve a total of 180,000 farming families. These schemes enable families to grow food for subsistence as well as cash crops for market. In addition, the schemes contain the amenities of the towns so as to make the "countryside attractive to the farmers". Hopefully this will stem rural to urban migration which usually accompanies development. In effect these schemes are planned towns in the rural areas.

As significant capital investments, these schemes require extensive technical expertise to design, construct, and maintain. Mechanical and civil engineers are needed to establish basic housing, production, service, transportation and recreational facilities; hydraulic engineers are needed to install piped water systems as well as irrigated rice systems; and electrical engineers are needed to design and implant cost-effective electrification networks, as well as to link the schemes to a few hydroelectric power sources that harness water power in Malawi's rural areas.

Engineers are also needed to develop and maintain the networks of Malawi's agricultural research stations and parastatal agro-processing units, both of which enhance the productive capacity of the Malawian farmer. These units are especially important for processing the cash crops of tea, tobacco, and cotton. Vital to the development of the agricultural system is the civil engineers' contribution to an integrated transportation network. At present, Malawi has over 7,000 miles of roads and 400 miles of railway. In addition, shipping services transport goods and passengers on lake Malawi which extend through most of the country in a North-South direction. Of special importance to the rural farmer is the construction of feeder roads so that the goods can travel by paved roads to market towns and eventually, by rail to the urban markets of Zimbabwe and the seaport of Mozambique.

Engineers are also needed for the design, construction and inspection of health and educational services, many of which are inaccessible to rural dwellers. These include rural dispensaries and clinics, maternal-child health centers and large primary schools. Needless to say engineers are vital to the construction of larger buildings, such as hospitals and secondary schools which may eventually serve rural dwellers directly or indirectly. Thus Malawi's rural production system and infrastructure, which is more advanced than those of many African countries, need qualified engineers to create, service and maintain a variety of facilities and networks. Without them this infrastructure would come to a halt.

Like Malawi's rural infrastructure, the educational system is relatively advanced. In 1970 there were over 2,000 primary schools, with 60 per cent of primary school age children in the country actually enrolled in

them; and there were over 60 secondary schools with almost 15 per cent of the secondary school age children actually enrolled in them. In addition to this great expansion, there have been qualitative improvements in the curriculum (especially primary science) and in teacher training. In effect, Malawi is at the stage where it needs and can afford an expanded tertiary level of education. Despite the vigorous training in modern engineering which students will undergo in their respective specialties, they will receive a common introduction to practical engineering science. This will serve as a transition from their non-technical training in secondary school, to the highly technical one at the Polytechnic and as a perspective for all students as to how best they can use their technical training in Malawi's development. Another adaptation of the project to the Malawi development environment, is the fact that the engineers will be Malawians, not expatriates. At present, 75 percent of all high level manpower positions are filled by expatriates. The strengthening of the Polytechnic falls squarely within the GOM's policy of "localization", or the replacement of expatriate experts by qualified Malawians. With 25 professional engineers, 75 sub-professional diplomates and 100 engineering technicians, per year from polytechnic, it is a step forward towards expanding access for Malawians to enter useful and skilled positions in the society which have been gone by default in the past for expatriates at great expenses to Malawi and donor nations.

In summary, this project fulfills two basic criteria of social soundness analysis: contribution to rural development, and compatibility with, and improvement of existing institutions.

B. Economic Analysis

The dual thrust of this project is towards institution building and manpower development. In attempting to arrive at a quantitative economic justification for the project, it became readily apparent that the project's benefits were so pervasive, affecting all economic sectors through both direct and secondary multiplier effects, that traditional cost-benefit analysis was insufficient to demonstrate the project's full economic impact. Moreover the economic and social returns of institution building activities require a long gestation period, and accrue ultimately and more meaningfully to the nation as a whole rather than to the few immediate student and staff direct beneficiaries. In addition to these technical problems, data limitations also precluded the type of vigorous analysis that would otherwise be desirable. Nevertheless on the basis of the considerations discussed below, USAID/Malawi believes that the project is economically sound and will be an effective start towards achieving an eventual self-sufficiency in producing qualified engineering professionals and sub-professionals of Malawi's total population, about one-third or 1.7 million of whom are considered economically active and able to participate in wage employment or family agriculture. Only 15 per cent of this active population is engaged in the modern sector, leaving the majority dependent upon employment in the traditional agriculture sector.

Structure of Wage Employment
(000)

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>Average Annual Growth</u>
- Agriculture, Forestry and Fishing	80.4	.93	103.2	10.5
- Manufacturing	27.7	32.2	24.7	9.5
- Construction	22.9	21.1	21.2	.2
- Transport and Communication	11.4	.12	12.6	6.3
- Public Utilities	2.5	2.7	3.1	2.3
- Services	<u>.82</u>	<u>83.7</u>	<u>.88.1</u>	<u>4.1</u>
TOTAL	226.9	224.8	262.9	6.9

Even in the monetized portion of the economy, agriculture plays a dominant role, with its share in wage employment approaching 40 per cent. The private sector's participation in wage employment was 73 per cent, reflecting the GOM's preference for the private sector's strong role in the economic development of the country. This level of growth however has not been accompanied by a concomitant increase and improvement in the country's supply of trained manpower. Although the available data is far from exhaustive, it is clear that existing educational facilities are not keeping pace with Malawi's need for trained, experienced labor in all sectors. In fact, the deficit is continuing to accumulate and, subsequently, placing further constraints on future expansion of the economy. For instance, results of the A.I.D. 1979 Engineering Manpower Survey of Malawi showed the following for engineers alone:

	<u>Present Need</u>	<u>Cumulative Needs by 1983</u>	<u>Cumulative Needs by 1988</u>
- Malawians	97	404	752
- Expatriates	<u>97</u>	<u>98</u>	<u>158</u>
Total Cumulative Demand	124	505	910

It thus appears that the immediate problem facing Malawi is not one of possible saturation or oversupply of engineers but one of insufficient engineering supply. When examining more broadly defined occupational categories, the outlook is more discouraging. A revised revision of the World Bank's 1978 projected need for skilled, middle and high level personnel presents the following requirements:

Required skilled, middle and high level Personnel

	<u>1971</u> <u>(base year)</u>	<u>1976</u>	<u>1977</u>	<u>Increase</u> <u>1976-1987</u>
- Senior	1,706	2,320	4,980	2,660
- Intermediate	14,854	21,530	54,430	32,920
- Skilled	<u>31,186</u>	<u>46,680</u>	<u>127,900</u>	<u>81,220</u>
TOTAL	47,746	70,530	187,330	116,800

The above occupational categories are defined as:

	<u>Occupational Category</u>	<u>Educational Requirements</u>
- Senior	Professional and top management	University degree or equivalent qualification
- Intermediate	Technical, sub-professional middle and junior management	Senior, secondary, technical and related qualification
- Skilled	Craftsmen, office and clerical workers, etc.	Junior, secondary, trade and vocational qualifications

There is no clearly defined relationship between occupation and education but the above provides a general basis for planning purposes.

To pursue development efficiently, the entire range of engineering skills is required, Malawi now produces neither sufficient numbers of engineers nor a sufficient range of engineering skills. Consequently, there are programs of development in Malawi which are proceeding at a slower rate than desired because of the absence of easy access to the technologies for which engineers are trained. The absence of appropriate numbers of engineers is a drag on the real effort to meet development needs. The following examples of major development activities each require engineering skill for some or all of its aspects. The engineers are needed to provide water supply; design and supervise the construction of roads, bridges, and irrigation schemes; and maintain plants, vehicles and equipment. In the examples listed below, there are so few fully qualified indigenous engineers assigned to the projects that no records are kept. The government is forced to rely upon the services of the engineers assigned to the Ministry of Works or buy expatriate skills. The result is very thinly spread services. The cost is wait time for the Ministry of Works engineering services which increases the cost of implementation in addition to diminishing efficiency.

Nine examples of major ongoing development activities requiring professional engineering services follow :

- (a) Lilongwe Land Development Program, Phase III:
Total cost \$13.8 million;
- (b) Shire Valley Agricultural Development Project Phase II:
Total cost \$13.2 million;
- (c) Karonga-Chitipa Rural Development Project, Phase II:
Total cost \$13.3 million;
- (d) Smallholder Tea Development: Total Cost \$1.9 million;
- (e) Crop Storage: Total Cost \$533 thousand;
- (f) Seed Technology: Total cost \$403 thousand;
- (g) Housing for agricultural extension staff:
Total cost \$1.8 million;
- (h) Animal Husbandry: Total cost \$1.3 million;
- (i) Development of Dry Land and Irrigated Settlement Schemes: Total cost \$1.7 million;
- (j) Fisheries Development: Total cost \$1.3 million;
- (k) Development of traditional housing areas parts I and II:
Total costs \$16.0 million;
- (l) Transportation, major roads: Blantyre-Chikwana Road, \$7.5 million; Karonga-Kacheche Road \$924 thousand; Kasungu-Jendi Road \$10.9 million;
- (m) Transportation, district roads, \$12.4 million; and
- (n) Rural Water and Sanitation: Total cost \$35.8 million.

The lack of qualified engineers is partially responsible for increases in development costs, poor design, unsatisfactory structural standards, premature write-off of equipment due to inadequate maintenance and the inability to make repairs in unusual circumstances; all of which adds considerably to the total cost of the development output. Although cognizant of the need to conserve land and prevent desertification, and reduce dependence on imported energy, Malawi has few engineers in these specialized areas.

Since 90 percent of Malawi's population resides in rural areas, most of the development activities are centered there too. The nations' development aims to provide adequate food, clothing, housing, schools, health care, and clean water to its entire population at a reasonable rate of achievement. Without engineers in sufficient numbers, possessing the full range of engineering skills, the achievement of goals will be retarded considerably.

It is concluded that this project will assist the GOM in building a modern institutional complex to produce university-trained engineering talent. If the demand for these critical skills are to be met on a continuing basis, Malawi must develop a self-regenerative, indigenous capacity to produce and replenish them as well as provide the leadership essential to the nation-building process. Historically, the GOM has had to rely on expatriate personnel, or send students abroad for university training. Neither of these methods is a satisfactory substitute for what a well organized and operated local technical college can provide.

C. Administrative Analysis

1. The University

The University of Malawi and its constituent colleges are a legal entity under the "University of Malawi Act, 1974", enacted by Parliament that year. This Act provides for the establishment of the University and for its management and administration. It also sets up a Board and a Senate as well as defines the authority and responsibility of the key University and constituent college staffs.

This Act is the framework within which the Polytechnic operates administratively. The act provides strong central control over the individual colleges, as will be shown in the following description of key sections.

a. The Council of the University of Malawi

The Council is the primary means for the central control of the University. It is a legal entity of "body corporate". The Council is the governing body of the University responsible for its overall management and administration and for control of its property and revenues. It also exercises general control over the affairs of the University. It has the right to enter into obligations and liabilities "without restriction" except in matters pertaining to the University's academic policy. In the latter case, such matters must be referred first to the Senate (described subsequently). The Council must take into account recommendations made by the Senate in any of its actions regarding academic policy.

The Council is comprised of the following members:

- Chairman - Appointed by the Chancellor of the University*
- Vice Chancellor - who actually manages the University
- Secretary for Education or nominee
- Secretary for Treasury or nominee
- Two members appointed by the Chancellor
- One member appointed by the Inter-University Council for Higher Education Overseas
- One member appointed by the American Council of Education
- Four members appointed by the Senate from among its members
- One member appointed by the University of Malawi alumni or "Ex-Students Association"
- One member appointed by the Council itself from a panel of persons distinguished in university affairs in Malawi and nominated by the Vice-Chancellor
- Such other members, not exceeding six, as the Council may decide. At least one of these must be a practicing member of the teaching profession.

This governing body of the University is obviously broad based and has the necessary legal authority to act on University matters.

b. The Senate

The Senate in effect is the academic and professional advisor to the Council on the following matters:

- Subjects to be pursued in each college
- Plans of study and research which may be offered
- Academic organization of the University and effectiveness of its work relative to objectives
- Recommends new colleges or institutions
- Appoints consultative committees such as the one for expansion of the Polytechnic

* - The Chancellor position is held by His Excellency Ngwazi H. Kamuzu Banda - Life President of the Republic of Malawi

- Controls content and methods of teaching and methods of assessment
- Appoints external examinees when needed
- Within a budget, it controls fellowships, scholarships, given to students

The Senate consists of the following members:

- Vice-Chancellor (Chairman)
- Principals of the individual colleges
- Deans of the colleges or institutes
- One or more members from each college or institute elected from the full time academic staff
- Other members as may be desired for coordination with users of the University's output.

c. The University Central Staff

This group is responsible for the day-to-day administration and operation of the University system. Key positions are:

- Vice-Chancellor - the executive officer who actually manages the University
- Registrar*
- The Estates Development Officer
- Finance Officer **
- Auditor
- University Librarian

The Central Staff is housed in a separate building in Zomba. It is, therefore, close to its constituent colleges, the most distant are the new Nursing College being built in Lilongwe and Bunda College, both are 4 hours drive away.

* Supported by an Appointments Committee

** Supported by a Finance Committee

It can thus be seen that the Polytechnic operates within a well defined and regulated University administrative system. This Central System has considerable control in terms of policy budgets and teaching guidelines for its internal operations.

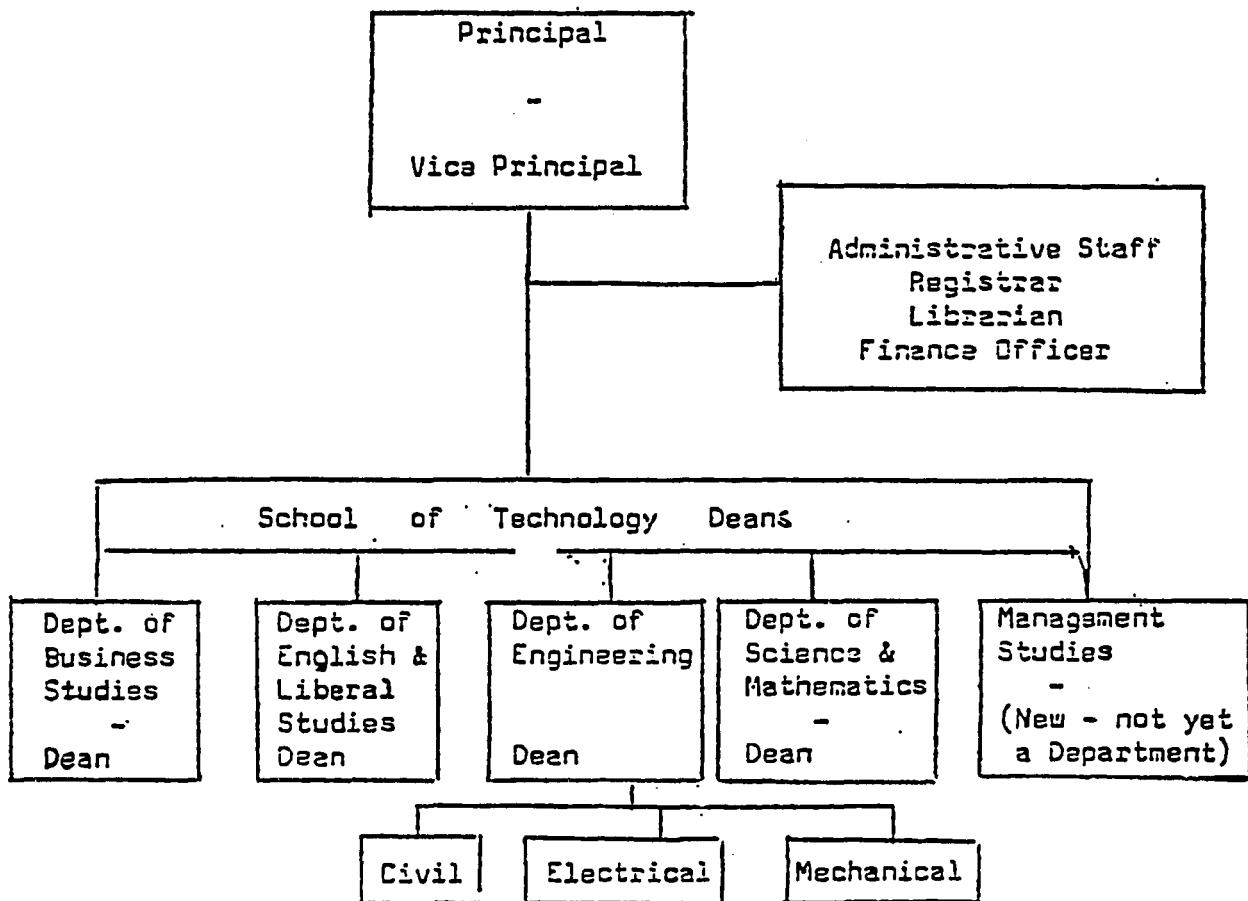
2. The Polytechnic

General: The Principal of the Polytechnic is responsible directly to the Vice-Chancellor for the administration and management of the Polytechnic. He is appointed by the Council and is responsible to it for the selection of persons to be registered as students. He is also responsible to the Senate for general academic matters such as curriculum development. Figure 4 following, shows the existing organization.

The Deans of the Polytechnic are elected "via relevant statutes" and are under the general direction and control of the Principal.

Figure 4

POLYTECHNIC ORGANIZATION



Total number of full time teaching staff as of August 1979 was 63
(13 in Business Studies and 45 in the remaining three Departments)

They are explicitly responsible for all matters regarding the progress and welfare of their students.

The Polytechnic has regulations approved by the Council covering entry requirements and examination requirements for certificate and diploma. Similar regulations for the new engineering degree program will be established before students are selected for the final two years. These regulations are consistent with those of other two degree granting colleges of the University. Assessment methods for University courses is the responsibility of the Senate. It is within these regulations that the Polytechnic administrative organization must operate. Subsequent sections describe relevant details of these regulations and areas which the team believes require strengthening.

b. Staff Hiring, Upgrading and Retention. The Polytechnic has an on-going procedure for identifying potential new staff members and for providing them with proper training. The "Staff Associate" position is a teaching apprenticeship of one year duration followed by overseas training. The Staff Associates are given a small teaching load under the direction of a member of staff but their main task is to become fully acquainted with workshop and laboratory equipment and with methods of using them. They are, in effect, during this part of their training, laboratory assistants, on the assumption that engineering is based on practical work and that Staff Associates have had a minimum of practical experience in their past careers. In addition, Staff Associates are expected to attend instruction by the staff in basic subjects which will help their further studies overseas.

In addition to selection of students from the Diploma courses and Board of Governors courses, Staff Associate vacancies are advertised in the public press and sometimes attract students with a good academic record plus industrial experience.

There are two ways of probing back into the school system for likely students for engineering training and for engineering teachers. One is through visits of Polytechnic staff to schools for talks with staff and pupils. When the degree course is well established it should not be difficult to attract some of the best pupils to the Polytechnic.

The second approach is to select candidates from the students who have completed the Technical Teacher Training Course in Engineering. This is a newly established three year course which has produced one class. The course is for students with the basic qualifications required for the Engineering Diploma. The first year's study is the same as that for engineers. The second and third years concentrate on workshop skills and drawing. The students also study teaching methods and education theory. Student output of this course is used to teach technical subjects in Secondary Schools. The Polytechnic maintains close liaison with graduated students.

The students are invited to seminars and workshops. In this way knowledge is constantly updated and enthusiasm is maintained. Further, the students develop professional rapport.

Staff retention is a difficult aspect to project bearing in mind the myriad of individual decisions; however, appropriate incentives impact positively on staff retention. Consequently staff salaries and other amenities should compete favorably with industry.

As the staff builds in quantity and quality it is reasonable to expect that the Polytechnic will achieve a reputation for its consultancy service to industry which will in itself constitute both an attraction to and an incentive for remaining at the Polytechnic.

c. Student Assessment Procedures. A full time Career Counselor is included in this project to improve student assessment procedures. Heretofore, student assessment rested principally on examination results. A full time counselor will have important impact on student assessment. See Annex B for details on the Career Counselor.

d. Teacher Assessment. There is need for the University to develop criteria by which to judge teacher effectiveness.

D. Technical Analysis

1. Site Location

The Polytechnic is situated on approximately 55 acres of land, 1.5 miles from the center of the city of Blantyre, with a 1,828 foot frontage on the south side of the Kamazu highway. The land is the northern half of the site is gently sloping, with the southern section falling more sharply away to the Naperi Stream which forms the site's southern boundary.

The present Polytechnic was completed 14 years ago and consists of the following previously AID-approved structures:

- a. One 2-story classroom/administration building
- b. One double lecturer theatre building
- c. Two large workshop buildings
- d. A vehicle mechanics workshop
- e. A maintenance workshop

In 1977, the University of Malawi and the Polytechnic Commissioned the local architectural and engineering (A&E) consulting firm of Norman and Dawbarn to develop a Master Expansion Plan for Polytechnic. This plan established the engineering and planning feasibility of the expansion of the physical facilities in support of the proposed new degree programs

and increased enrollments. It is considered the basic plan, design and lay-out for the proposed campus construction, but may be modified during the final A & E design.

The staged construction will include the following:

- (a) construction of a new library, science lab block, cafeteria, student union, dispensary and 4 residence halls.
- (b) conversion of the existing teaching buildings to relocate the existing library and cafeteria, and to replace inadequate science labs with additional classrooms and drawing offices.
- (c) conversion of two existing workshop buildings for use by the mechanical and civil engineering departments.
- (d) construction of 50 additional off-campus staff houses.
- (e) construction of on-campus sports facilities.

Under this proposed project, AID will finance and build the following new structures as the capital construction component of its present assistance package:

- (a) A 26,000 sq. ft. library
- (b) An 18,000 sq. ft. multiscience laboratories building
- (c) Four, 3-bedroom senior staff houses

Funds and commitments have been made by three other donors to compliment and complete the GOM's Master Expansion Plan for Polytechnic.

2. Engineering Plan and Design

The need for additional facilities and space at the Polytechnic has become critical for the present enrollment and is inadequate for the expected new degree programs and their future increased enrollments. Part of the administration building has been used as a less than adequate library and cafeteria. Upon completion of the new library (by AID) and the cafeteria (by the British), these areas will be reconverted back to much needed classroom space. The new science lab building will add 13 new laboratories for chemistry, physics, telecommunications and electronics. The senior staff houses are to support the technical assistance lecturers/advisors being provided by AID as one of the 5 components of this project.

(a) The Library

The proposed site of the new library will be prominent on the present campus, centrally located to the classrooms, dormitories and within easy access to non-student reference use.

Based upon the institutional design and function guidelines and the formula used by educators, architects, engineers and accrediting agencies, there should be one library reader-seat for every 4 full-time students, 25 sq. ft. of total building space for each reader-seat, 62.75 sq. ft. per 1000 volumes of materials and 25% of total building space for support/services areas, toilets, circulation, etc. No special provisions are made for faculty members or part-time students. This seating criteria is considered minimally sufficient for most developed countries and quite adequate for Polytechnic and its expected growth. The present library facility has approximately 4000 sq. ft. of total building space or 5.7 sq. ft. for each full-time student, as opposed to the recommended minimum of 25 sq. ft. Current seating capacity is for 120 readers, instead of the 200 seats needed for the 800 full-time students. By 1985, with enrollment projections at 1300 full-time students, the library will require 450 reader seats. Of the 36,000 volumes of library materials now at Polytechnic, at least 20 per cent are outdated. Accrediting organizations recommend that an undergraduate library should have a minimum of 50,000 volumes for the first 500 full-time students and 10,000 volumes for each additional 200 students. By these standards, Polytechnic should now have 60,000 volumes. Since the Polytechnic library is and will continue to be mainly technical in nature, a minimum core collection of 50,000 well chosen technical/scientific volumes will be adequate. As part of the university-wide library network, infrequently requested materials can be obtained from the other 2 affiliated colleges. The present library has reached its capacity and consequently, new acquisitions have almost stopped. After achieving the up-dated 50,000 core collection, the new library will need to acquire approximately 5,000 new additional annually. Based upon these guidelines, the new Polytechnic Library, designed to house 90,000 volumes, should be adequate for internal expansion, without any costly structural modifications for conceivable needs through the year 2000.

Cost estimates for this project component have been made for a 26,000 sq. ft. building, with functional space allocations to meet present and projected future needs. Included in the design is space for adding a computer teaching center and a media learning resource center, similar to the one proposed by the 1978 AID-funded library report for the Bunda Agricultural College. Although the final design is yet to be completed and approved, the library will be designed on the principal of open access stacks, areas for control, catalogs, periodicals, staff offices, workroom and storage. Space allocations are as follows:

- 450 seating capacity @ 25 sq. ft./reader	11,250
- 90,000 volumes @ 62.75 sq. ft./1000 volumes	5,648
- Media Learning Center	1,000
- Computer Teaching Center	1,000
- Administration, staff offices, etc.	<u>2,000</u>
	20,898
- 25% support/service areas for circulation, toilets, etc.	<u>5,224</u>
	26,122
	26,000 sq. ft.

The above library space allotment is based on formula given by the University's consulting firm of Norman and Dawbarn who were responsible for the development of 1977 Master Plan for the Polytechnic. This space distribution also conforms to those suggested by other professionals cognizant of library design and function. Space allotment has also included the Polytechnic's future anticipated needs with respect to increased student enrollments, books acquisitions and storage, and use by the staff and the public. Consideration for possible future expansion will be made in the final design.

(b) The Science Laboratories Building

Based upon the new curricula, doubled student intake and the additional courses necessary for the new engineering degree program, an additional 13 science laboratories, offices and storage rooms are required to carry-out the applied and theoretical training. The 18,000 sq. ft. science building will be designed to similar height and width dimensions as the adjacent existing laboratory block, and will contain the laboratories and associated preparation facilities for chemistry, biology, physics, electrical science, electronics and electrical machines together with staff offices related to these facilities. The design will take into account the varied floor loadings of machines and equipment and the need for easy access and emergency escape. Service will include piped gas and water along the external walls.

The new laboratories are designed to accommodate classes of 20 students each and will serve both the Science Department and the Engineering Department. Based upon carefully developed courses and schedules of study for the entire 6-year degree courses, supported by the 4-year diplomate and 2 year technical courses, the University and Polytechnic officials have programed their present and long-term enrollments and lab use so that the science department lab classes will be a maximum of 16 students each and the engineering lab classes will be a maximum of 12 each.

The science block space allocations have considered estimated anticipated growth in the student body and staff, as well as present and future acquisition, function and placement of specialized equipment and machines. The space allocations are based upon standards used for such facilities of similar institutions in most developed countries, and coincide closely with the areas set forth in the 1977 Master Development Plan.

The lab space allocated for chemistry is critical in terms of safety. Precautions will be taken to assure proper ventilation of harmful gases. Work areas and table tops will comply with prescribed safety standards. Humidity, temperature and air circulation regulators will be provided for all of the balance rooms. Appropriate polarized electrical outlets will be suitably located in all of the labs. Special electrical wiring and outlets will be provided for the electrical machines lab, necessary to accommodate the various power requirements.

(c) General Construction and Finishes

Both the library and science block building will conform to the basic architectural appearance of the existing structures, e.g., concrete frame structures with medium-weight roofs and brick infill. Finishes will be simple like those commonly used with PVC-tiled floors and inside plastered walls. Both structures will be two storey buildings similar to the present buildings. The light roofing will consist of corrugated galvanized roofing sheets supported either on steel or timber structure and covered with clay roofing tiles to protect the galvanized roofing and to provide cooler temperatures. All structures are planned for maintainance free, functional and economical space usage. All work-benches (fixed) will generally be of hardwood timber except where melamine is necessary (science block). Fume cupboards in the science block will be imported with a fume extraction system. One fume cupboard is to be designed to cope with very corrosive perchloric acid fumes. Special care will be taken in the library building design in regard to adequate lighting, reduction of noise levels, cross ventilation and leakproof roofing.

(d) Construction Materials

With the exception of cement, aggregate, sand, bricks, roofing sheets, nails, paint, timber, and steel sections, all the other building hardware will be imported into the country. This imported hardware includes reinforcing steel, ironmongery (hinges, bolts, nuts, screws, locks, window stays, aluminium window frames, etc.) glass, 220 V electrical fittings and cables, sanitary fittings (PVC pipes are locally manufactured, however fittings must be imported) and some special fixtures. Most of the importation is from Code 941 countries, however some small amounts of materials are imported from Code 935 countries.

(e) Staff Houses and Utilities

In Malawi, as in most African countries, modern urban housing is in great demand and short supply. As is the practice at most African universities, junior and senior staff members are furnished a residence as much as a necessity as it is an inducement.

The University and Polytechnic have taken this into consideration in their planned expansion of the curricula, student body and local and expatriate teaching staff. As part of the Polytechnic Master Plan, 50 staff houses are to be constructed, in phases, most of which will be financed by other donors. In support of the technical assistance advisors to be provided in AID's participation in the Master Plan, 4 senior staff houses are included in its construction component. (In the event these houses are not completed when the T.A. advisors arrive in country, the GOM, through the Polytechnic will provide suitable alternative housing). Included in the cost of each staff house is an allowance of approximately \$10,000 for furniture and appliances.

The site has been allotted by the Blantyre Planning Unit. A REDSO engineer visited the site, which is located on Kasungu Crescent Road behind the former Malawi Congress headquarters in the Limba area. A favorable determination was made regarding site conditions and proposed building layout. The site terrain slopes sharply near the southern boundary. It is proposed to build NDB/410 type houses, of the type that were built for the AID-financed Bunda Agricultural College near Lilongwe (Project No. 690-0054). Those plans were approved by REDSO/EA engineers. Slight modification will be required due to the steep sloping nature of the ground. The selected A&E firm will be responsible for the site adaptation of these houses to the existing grade condition and for bringing the utilities to these houses.

Science Building Space Allocation

<u>Description</u>	<u>No. Required</u>	<u>Total area in sq. ft.</u>	<u>Remarks</u>
Physics	three at 900 sq. ft. ea.	2,970	
Prep-room	two at 400 sq. ft. ea.	800	
Lightproof room (Developing)	one	200	
Dark Room (Printing)	one	200	
Chemistry lab	one	900	includes one fume cupboard for Perchloric acid for electrical
Store Room	six at 100 sq. ft. ea.	600	
Biology lab	one	900	
Prep. room.	one	400	
Animal room	one	120	
Balance rooms	two at 200 sq. ft. ea.	400	
Store rooms	two at 200 sq. ft. ea.	400	one for Physics and one for Biology Chemistry
Electronics	one	840	
Telecommunications lab	one	840	
Electrical science labs	two at 1110 sq. ft. ea.	2,220	
Electrical machines room	one	1,100	
Instrument room	one	200	
Glass blowing room	one	200	
Staff Offices	six at 200 sq. ft. ea.	1,200	
		<hr/>	
	Sub-Total	14,680	
25% support/services area for circulation, toilets, etc.		3,867	
		<hr/>	
	Total (rounded)	18,000	

Sewage disposal will be provided for the above structures by municipal sewage lines passing near the Neperi stream. Water and electricity are available at the site. Access to the houses from the main road (Kasungu Crescent) will be provided under the general housing layout (see attached plot plan for housing).

3. Plant and Equipment Maintenance

The present condition of the Polytechnic buildings, classrooms, offices and existing equipment indicates a high degree of good and regular maintenance. Polytechnic has its own buildings and equipment maintenance staff and plans have been approved for its expansion to meet the responsibilities of the new degree programs. The GOM/University of Malawi has agreed to provide additional funds for increased recurrent maintenance costs to cover not only the new construction and equipment to be provided by AID, but also for the other three donors' construction and equipment contributions. Maintenance, testing and periodic calibrations of certain equipment will be performed by Technicians and teaching staff. All procurement of equipment will include a supply of service manuals and recommended spare parts, where appropriate.

(1) Estimated Construction Costs

(a) Basic Construction Costs

<u>Description</u>	<u>Sq. Ft.</u>	<u>\$ Cost per Sq. Ft.</u>	<u>U.S. Dollars</u>
Library	26,000	\$47.00	\$1,222,000
Science Building	18,000	\$42.00	756,000
4 Staff Houses	1,700 ea.	\$25.00	170,000
TOTAL			\$2,148,000

(b) Total Construction Costs

<u>Description</u>	<u>Basic Cost</u>	<u>New Costs with 20% Infl. Comp. 2 yrs.</u>	<u>Site Work (5%)</u>	<u>Contingency (15%)</u>	<u>Total Construction Costs</u>
Library	1,222,000	1,759,680	87,984	263,952	2,111,616
Science Bldg.	756,000	1,088,640	54,432	162,296	1,306,368
4 Staff Houses	170,000	244,800	23,240	36,720	293,760
	2,148,000	3,093,120	154,656	463,968	3,711,744

(c) Estimated A & E Costs

The A & E consulting fees are estimated at 8% of total construction cost, plus an inflation factor estimated at date of the contract award. Note that the final design drawings, quantities, etc. have already been developed by GOM/MOW for their standard NDE/410 - type government house, previously approved for use in two other AID projects.

Total construction costs	-	\$2,148,000
8% A & E Fee		\$171,840
1 year's inflation @ 20%		<u>34,368</u>
TOTAL A & E Fee		\$206,208

Total A & E and Construction Costs

Construction	\$3,711,744
A & E Fees	<u>206,208</u>
	\$3,917,951
Rounded	\$4 Million

D. Financial Plan

The extensive and rather integrated approach of the Polytechnic's overall expansion, to which this project contributes, also represents a considerable investment in Malawi's institutions of learning and human resources. Given the importance of AID's project inputs to all of the activities being financed during the expansion effort, any change in finances would only jeopardize the entire effort. According to current plans, the cost of the master expansion of the Polytechnic is estimated at \$28.3 million. AID's project under this expansion equals U.S. \$8.3 million. The design of this expansion is such that all the activities, being financed by different sources, are mutually essential.

In designing the project and determining an appropriate division of project inputs, two factors were given priority attention: (a) the GOM contribution is significant enough, in terms of actual and projected variable costs that it must account for the magnitude of operating and maintaining the project after donor assistance terminates; and (b) the economic costs of project inputs are calculated whenever feasible on their social rather than financial worth. This is especially important when assessing the relative value of host country contribution.

Total financing for the A.I.D. project equals U.S. \$19.6 million. Table I, plots total financing according to AID and GOM contributions (source) and their projected use. In Table 2, sources of finance are presented according to inputs to the total expansion effort. Table 3 represents only A.I.D. expenditures, by input and per fiscal year. In general, inflation and contingency allowances are based on several formulas, with local currency costs separated from foreign exchange costs. Differing rates of inflation were also applied to commodity and personnel, since the rate of inflation was likely to be higher for the former than for the latter. In the final budget, approximately 20 per cent inflation of aggregated project inputs has been calculated for inflation and contingency.

Table 1

Summary Costs Estimates and Financial Plan

(\$000)

Project No.: 612-0201

Malawi - Polytechnic
Engineering Program

USE	SOURCE		AID		GOM		TOTAL		TOTAL
	FX	LC	FX	LC	FX	LC	FX	LC	
Technical Assistance	1760	—	—	1000	1760	1000	2760		
Equipment and Commodities	282	10	—	—	282	10	292		
Construction	1239	1178	—	400	1239	1578	2817		
Participant Train- ing	815	465	—	154	815	619	1434		
Project Evaluation	64	—	—	—	64	—	64		
Contingency and Inflation	1747	754	—	—	1747	754	2501		
Projected Recurrent Cost	—	—	—	9750	—	9750	9750		
Total Contribution per financial source	5892	2422	—	11,304	5892	13,726	19,618		
Total Contribution per financial source	8314			11,304		19,618			

Table 2

Total Expansion Inputs Including Inflation

<u>Project No. 612-0201</u>	<u>Malawi - Polytechnic Engineering Program</u>				
<u>Participant Training</u>					
Long-Term	1,595,000	---	---	---	154,000
Sub-total	(1,595,000)	---	---	---	(154,000)
<u>Capital Construction</u>					
Science Block	1,306,368	---	---	---	---
Library	2,111,616	---	---	---	---
Hostels	---	756,000	790,685	1,658,160	---
Staff Houses	293,760	113,400	---	785,610	---
Cafeteria/Rec. Block	---	401,500	---	365,400	---
Workshop (new)	---	269,640	---	269,640	---
Renovations	---	---	---	---	---
Laboratories	---	---	---	200,000	---
Workshops	---	---	---	124,000	---
Classrooms	---	---	---	180,000	---
A & E Services and	206,208	---	---	396,900	400,000
Land	---	---	---	---	---
Lecture Hall	---	---	---	504,000	---
Wardens' Flats	---	52,920	---	---	---
External Works	---	---	20,662	---	---
Sub-total	(3,917,952)	(1,691,550)	(811,348)	(4,483,710)	(400,000)
<u>Commodities/Equipment</u>					
Science Block	366,492	---	---	---	---
Furniture/Equipment/ Books	219,944	327,600	---	816,480	---
Sub-total	(586,436)	(327,600)	---	(816,480)	---
<u>Technical Assistance</u>					
Long-Term	2,134,332	---	---	461,160	1,000,000
Sub-total	(2,134,332)	---	---	(461,160)	(1,000,000)

Table 2 (Cont.)

Other

Recurrent Budget	---	---	---	---	9,750,000
Project Evaluation	80,280	---	---	---	---
Contingencies	---	84,028	---	---	---
	<hr/>				
GRAND TOTAL	8,314,000	2,019,150	895,376	5,761,350	11,304,000
Rounded	8.3	2.0	0.9	5.8	11.3
Total expansion cost					28,181,973

Table 3

Projected AID Financial Requirements by Fiscal Year

(\$000)

Project No.: 612-0201

Malawi - Polytechnic
Engineering Program

<u>Inputs</u>	<u>FY80</u>	<u>FY81</u>	<u>FY82</u>	<u>FY83</u>	<u>FY84</u>	<u>TOTAL</u>
Technical Assistance	---	124	560	558	508	1,760
Equipment and Commodities	---	292	---	---	---	292
Construction	938	797	682	---	---	2,417
Participant Training	48	256	344	344	288	1,280
Project Evaluation	---	17	---	47	---	64
Inflation and Contingency	514	514	1,041	233	199	2,501
TOTAL	1,500	2,000	2,630	1,182	995	8,314

Recurring Cost Structure

The recurrent budget of the GOM has increased from K50.5 million in 1971/72, the first year of the current 10 year plan, to K101.2 million in 1977/-8, a 12/3 yearly increase (K1 + \$1.25). During the same period the recurrent budget of the Ministry of Education grew from K 8.5 million to K 14.0 million or by 8.7 per cent a year. Education's share in the total recurrent budget has fallen from 16.9 percent to 13.8 percent (see Table 4).

During the same time period, prices grew by 7.9 percent (Blantyre low income index; the high income index grew by 11.8 percent p.a.). Using the Blantyre high income index as deflator would have yielded a reduction of 2.9 percent p.a. in the MOE budget.

From 1971/72 to 1977/78 the University of Malawi's (UOM) share of the education budget declined from 25.6 percent to 23.1 percent. Normally the UOM budget grew by 6.9 percent p.a. while in real terms it fell by 1.0 percent p.a. Adding the 1978/79 data for the University reduces its normal growth rate to 6.3 percent over the entire 1971/72 - 1978/79 period. Within the University budget, Polytechnic's share has remained virtually constant at about 20 percent from 1975/76 to 1978/79.

Primary and secondary school enrollments grew by 12 percent p.a. over the period 1970/71 to 1975/76 while University enrollment has remained fairly static. Real per student expenditure has thus fallen dramatically over the decade of the 1970's. This may have been the result of significantly increased MOE efficiency or it may simply reflect a reduced input in each student's education. If the latter is the case, it represents a basic conflict between the GOM's stated educational priorities and its budgetary allocation to the education sector.

Financial Implications of the Polytechnic Expansion

Polytechnic's recurrent expenditures as of August 1979 grew from K485,000 in 1975/76 to K685,000 in 1978/79, a nominal increase of 12.2 percent p.a. or by an estimated 5/3 percent p.a. in real terms. The UOM has estimated that the additional finances needed for the Polytechnic expansion will reach K611,000 per year by 1982/83 in real 1978/79 prices. See Table 5.

GOM Recurrent Costs Contribution

The average annual cost of a University student in Malawi is approximately \$4,000 per year, per student. This does not include the expenses of the new engineering degree course expansion nor the subsequent increase in 1979, of an additional K6 (\$7.50 U.S.) per month allowance for each student. Allowing for an average of 20% annual inflation, the estimated GOM contribution attributable to the engineering students amounts to a total of \$9,751,625 over the life of the project. As shown in table 6, this contribution will increase from \$1,012,000 in FY 1980 to \$3,147,600 by the end of project in FY 1984.

Table 4

Annual Recurring Project Costs for the GOM

(\$000)

Project No.: 612-0201

Malawi - Polytechnic
Engineering
Program

FY 72

BASE = \$4,000 (K3,000) per year - per student

FY:	78	79	80	81	82	83	84
Estimated Engineering Student Enrollment:							
Inflation	<u>4,000</u>						
	+(10%) 400 =						
	<u>4,400</u>						
	+ (15%) 660 =						
		<u>5,060</u>					
		+(20%) 1,012 =					
			<u>6,072</u>				
			+(20%) 1,214 =				
				<u>7,286</u>			
				+(20%) 1,457 =			
					<u>8,743</u>		
					+(20%) 1,749 =		
							10,492

FY80	5060 X 200 =	1,012,000
FY81	6072 X 225 =	1,366,200
FY82	7286 X 250 =	1,821,500
FY83	8743 X 275 =	2,404,325
FY84	10,492 X 300 =	<u>3,147,600</u>

\$9,751,625 = GOM contribution toward engineering recurrent costs

Recurrent Budget of Polytechnic

(in thousands of Kwacha in estimated 1978/79 prices)

<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>	<u>1982/83</u>
587	634	685	778	983	1132	1322

From 1979/80 until 1982/83 the Polytechnic budget will have to increase by 17.9 percent p.a. in real terms to absorb the expanded costs associated with the project. At the overall University level, the Polytechnic expansion and other University expansion plans (UOM paper 13897) implies that the University budget will have to increase from K3/4 million in 1978/79 to K4.2 million in 1982/83 or by 5.7 percent p.a.

A summary indicative look at what could be the educational sector recurrent budget requirements is shown below:

Comparison of Past Education Requirements

<u>Past Performance</u>			<u>Future Requirement</u>	
<u>Recurrent Budget</u>	<u>Time Period</u>	<u>Real Growth (p.a.)</u>	<u>Real Growth</u>	<u>Time Period</u>
Polytechnic	1975/76-78/79	5/3	17.9	1978/79-82-83
U. of Malawi	1971/72-78/79	-1.9	5.7	1978/79-82/83
M.O.E. Polytechnic	1971/72-77/78	0.7	5.9*	1977/78-82/83

* To reach estimated IBRD target for mid 1980's assuming overall Recurrent Budget continues to grow at 4.1 percent p.a. in real terms.

Table 4

Ministry of Education

Recurrent Expenditure, 1971/72-1977/78

	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u> (Revised estimate)	<u>1977/78</u> (Estimate)
a) Administration & General	601.9	730.7	818.7	881.6	898.7	1,107.2	1,162.9
b) Primary Education	3,618.9	3,826.0	4,215.1	5,072.6	5,372.8	5,407.9	5,948.8
c) Secondary Education	1,491.8	1,682.7	1,802.2	1,897.9	2,118.3	2,462.4	2,573.7
d) Primary Teacher Training	380.4	426.1	483.0	462.0	492.9	626.7	681.9
e) Technical, Vocational and Special Education	141.1	142.3	139.2	159.1	174.5	204.5	229.5
f) Malawi Correspondence College	119.2	141.6	134.4	184.7	197.0	246.8	317.8
g) University of Malawi (of which Polytechnic)	2,188.5	2,318.0	2,430.0	2,613.0	2,738.0	3,018.0	3,244.3
h) Total	8,541.8	9,267.4	10,002.6	11,270.9	11,992.2	13,073.5	14,019.9
i) Central Government	50,461.0	57,031.0	61,733.0	73,828.0	84,421.0	90,414.0	101,217.3
(h) as % of (i)	16.9	16.2	16.2	15.3	14.2	14.4	13.8

Source: Approved Estimates of Expenditure on Development (and Revenue)
Account for the Financial Year, 1972/73-77/78.

UNIVERSITY OF MALAWI

ADDITIONAL FINANCES NEEDED FOR THE POLYTECHNIC EXPANSION

1979/80	1980/81	1981/82	1982/83
Salaries			
1 Professor	1 Professor	1 Professor	1 Asst. Librarian
2 Readers	2 Readers	2 Readers	1 Professor
	2 Lecturers	7 Lecturers	2 Readers
	1 Ass't. Registrar	1 Asst. Registrar	15 Lecturers
			1 Asst. Registrar
TOTAL SALARIES	TOTAL SALARIES	TOTAL SALARIES	TOTAL SALARIES
K28,100	K77,128	K31,734	K144,895
Wages			
-	-	14,271	40,119
Superannuation			
-	420	1,386	3,081
Passages			
7,631	15,720	22,008	47,160
Education Allow.			
6,660	8,460	15,060	18,000
Gratuity			
5,620	8,585	15,454	27,039
Accrued Leave Pay			
3,512	5,365	9,659	-
Rent			
14,400	32,400	59,400	103,000
Expenses			
Teaching & Research			
-	24,601	27,061	29,767
Library			
-	14,034	15,492	17,041
Administration			
-	11,133	12,246	13,470
Maintenance			
-	46,358	50,994	56,093
Student Living			
Initial			
-	2,680	2,000	500
Personal			
-	19,296	33,696	37,296
Book			
-	7,370	14,210	16,585
Travel			
-	3,000	3,500	4,000
General Expenses			
-	21,440	37,440	41,440
Living Out			
-	4,900	4,500	5,700
Union Grant			
-	268	468	518
TOTAL	TOTAL	TOTAL	TOTAL
<u>65,923</u>	<u>272,309</u>	<u>420,579</u>	<u>610,757</u>

E. IMPLEMENTATION PLAN

1. GENERAL RESPONSIBILITIES OF GOM AND AID

AID policy is to promote host government project implementation to the maximum extent feasible, particularly to provide the foundation for project initiated activities to be carried on after the Project Assistance Completion Date (PACD). In this Project the Government of Malawi, through the University of Malawi will have over-all implementation responsibility. Day-to-day operational responsibilities will rest with the Polytechnic. In general, the AID implementation role will be to monitor, to evaluate, and to provide approvals for critical actions and advice and assistance on AID requirements.

The AID officer having project implementation authority for Malawi will provide formal AID approvals and communications to the GOM through serially numbered Project Implementation Letters (PIL). Except as otherwise specified, goods and services of local, Code 941 and cooperating country source origin and will be eligible for financing under the Grant.

2. CONTRACTS AND PROCEDURES

Contracts for A&E services, construction, participant training, and technical assistance support and administration are needed to carry out this project. Wherever appropriate for more effective competitive bidding, advertisements and selection will be on a prequalification and international basis, including host country firms. The standard GOM/Ministry of Works contracting practices and procedures will be used in accordance with AID Handbook 11 for construction contracting. These procedures have been used and approved in two other AID projects.

Advertisements for expressions of interest and submission of pre-qualification data will be published internationally in appropriate newspapers/media in Malawi, U.S. and neighboring Code 941

IFB documents will be made available at the Malawi Embassy offices in the respective cities where advertised. Evaluation and selection of the successful A&E, construction will be made by the Central Tenders Board Committee. The training and technical assistance award will be made by the usual University/GOM committees for the purposes.

Supervision of the A&E and construction contractors will be provided by the Building Branch of the Ministry of Works, who have qualified and experienced staff available for this function. AID engineers will also make periodic site inspections and reports to monitor progress and application of AID requirements.

3. TRAINING

Participant training will be administered and implemented consistent with AID Handbook 10. The GOM will provide the AID/Malawi representative with timely nominations of candidates for training. The U.S. training contractor, with Polytechnic and AID approval, will develop selection procedures and criteria, prepare the necessary training documentation and be responsible for the processing and enrollment of the participants.

The training contractor will be required to prepare and arrange training at U.S. or third world institutions, whichever is more relevant or appropriate for the Project or when so directed by the GOM and AID.

Training request documentation and PIO/Ps will be submitted to the authorized AID representative for advance approval, who will furnish copies to cognizant AID/W offices, e.g., AFR/DR/SA.

4. TECHNICAL ASSISTANCE

Day-to-day responsibility for providing technical assistance and the manpower to carry on the Teaching activities of Malawian staff who have departed for training rests with the U.S. Technical Assistance Contractor. These services, to be performed in close collaboration with the GOM, will be procured under a direct AID contract as soon as possible after satisfaction of initial conditions precedent to disbursement. It is estimated that the Project will provide approximately 10 person years of long term technical assistance.

Advance approval by the GOM and AID of actual nominees and T.A. assignments will be required. The Research Coordinator will serve as Chief of Party.

Advance assurance of the availability of satisfactory housing for long term personnel scheduled to arrive in Malawi is critical. To some extent technical assistance personnel will occupy existing houses which will be made available by the GOM. Several additional satisfactory dwellings may become vacant when senior lectures/teachers depart for training. AID, however, as a fallback position will reserve the right to require the GOM to assign AID-financed housing to technical assistance personnel as necessary.

5. COORDINATION

The construction coordination will be the responsibility of the University Capital Works Development Committee. Day to day academic responsibility will be with the Polytechnic.

Formal or official communications and relationships between A.I.D. and other donors, as well as with the GOM, will be the responsibility of the authorized AID/Malawi representative. See the Administrative Analysis section that follows for further details.

F. IMPLEMENTATION SCHEDULE

TIME TABLE FOR ENGINEERING AND CONSTRUCTION

<u>DATES</u>	<u>ACTIONS</u>	<u>PRIMARY RESPONSIBILITY</u>
Sept. 30/80	Notice CBD and other Code 941 African Publications of order of magnitude of cost. Description and expression of interest in pre-qualification data.	AID/W, USAID, REDSO/E & GOM
Nov. 31/80	Prequalification and Notif. to qualified and disqualified, and insurance of invitation for Technical Proposals in Notice of CBD.	UOM, USAID, REDSO/E
Jan. 15/81	Notice in CBD & other Code 941 Media inviting interested contractors for prequalification.	AID/W, USAID, REDSO/E & GOM
Jan. 31/81	Closing date and hour for submission of T.P.S.	UOM/GOM/USAID
Feb. 15/81	Completion of T.P.S analysis.	GOM/UOM/USAID & REDSO/E
Mar. 31/81	Completion of Negotiation with successful A&E.	GOM/UOM/USAID & REDSO/E
Apr. 7/81	Closing data for prequalification of contractor.	A&E/GOM/UOM/USAID & REDSO
Apr. 15/81	Order to proceed with A&E work.	GOM/UOM/USAID
May 31/81	Submission architectural drawings.	GOM/UOM/REDSO/E
Jun. 30/81	Notice to prequalified and disqualified bidders.	GOM/UOM/USAID, REDSO/E
Jul. 31/81	Submission of rest of drawings.	GOM/UOM/REDSO/E
Oct. 15/81	Submission of rest of bid documents. Including an official government estimate.	A&E, GOM/UOM & REDSO
Nov. 15/81	Arrival of bid documents.	GOM/UOM/AID/REDSO
Dec. 15/81	Invitation to prequalified bidders to submit bids.	GOM/UOM/AID/REDSO
Feb. 15/82	Closing date for reception of bids.	A&E, GOM, UOM/USAID & REDSO
Mar. 15/82	Bid award and order to proceed	GOM/UOM/USAID

Mar. 15/83	Completion of Staff Houses.	Const. Contractor
Mar. 31/83	Acceptance of Staff Houses.	GOM/UOM/AID & REDSO
Sept. 30/83	Completion Library and Science Bldg.	GOM/UOM/AID & REDSO
Oct. 15/83	Acceptance of Library and Science Bldg.	GOM/UOM/AID & REDSO

A) COMMODITY PROCUREMENT PLAN

I. RESPONSIBLE AGENCY

The Government of Malawi, through the University of Malawi, shall have the overall implementation responsibility for the Project. Functional responsibility for the purchase of commodities will be exercised as follows:

A. Procurement in the United States will be done by a Procurement Services Agent (PSA) acting as agent for the Government of Malawi (GOM). Commodities procured by the PSA will be bought in compliance with A.I.D. procurement regulations.

B. Local Procurement will be accomplished by the University of Malawi through the Malawian Government purchasing agency, the Central Tenders Board. Local purchases will be made in compliance with GOM procurement regulations. The USAID project officer will be responsible to ensure that good commercial practices are followed, that prices are reasonable, and that all purchases are consistent with local laws and procedures.

C. Procurement of construction materials will be accomplished by the firm awarded the construction contract. It will be the responsibility of the USAID project officer to see that construction materials are procured in a manner that ensures that the lowest possible prices are paid for high quality materials, and that good commercial practices are followed by the contractor. The contractor will be provided a letter from USAID detailing the authorized source/origin of the commodities and indicating that USAID will monitor commodity procurement to ensure compliance to acceptable local standards. The contractor will also be required to submit a procurement policy statement to USAID indicating that commodities will be bought in compliance with the source/origin requirements authorized by the Project Agreement.

II. SOURCE/ORIGIN

Except as specifically authorized by waivers, all commodities procured for this project shall have their source and origin in countries included in A.I.D. geographic Code 941 (and the cooperating country).

III. SHELF-ITEM PROCUREMENT

It is anticipated that approximately \$59,555 worth of shelf items will be purchased in Malawi for the project. Except for a Model EP 510 Minolta plain paper copier (proprietary waiver requested in para VII below), the purchase of shelf items of A.I.D. geographic code 935 origin above the \$2,500 limit per item or more than the 10% of local cost financing limitation is not foreseen.

IV. PROCUREMENT SCHEDULING

In consideration of the long lead time for off-shore procurement and in order to minimize problems in the delivery of commodities to Malawi, PIO/C's will be issued at least one year in advance of desired delivery.

V. PROCUREMENT MECHANISM

It is planned that PIO/C's will be issued by USAID and/or by the REDSO/EA supply management office, in consultation with and approval by the Government of Malawi, to the PSA for the purchase of commodities in the United States. Local procurement will be initiated through Purchase Orders issued by the Central Tenders Board in consultation with USAID.

VI. Financing Mechanism

Purchases by the PSA in the United States will be financed by a Direct Letter of Commitment (D/LCOMM) to be issued by AID/W (FM/BFD). Purchases in Malawi by the Central Tender Board will be financed by the Direct Reimbursement Method.

VII. COMMODITY PROCUREMENT WAIVERS

A. A Proprietary Procurement Waiver to permit the local purchase of one Japanese made (A.I.D. Geographic Code 935) Minolta Model EP 510 plain paper copier at the cost of approximately \$8,200, and an expansion of the \$2,500 shelf item limitation will be required. With approval of this Proprietary Waiver the purchase will be made in Malawi. The justification for this request is based upon the criteria of HB 15 Chapter 3 para C4C3, compatibility with equipment on hand.

The Malawi Polytechnic, as well as other governmental institutions, now uses exclusively Minolta paper copiers for reproduction and document development needs. Moreover, adequate service and spare parts are on hand in Malawi to properly maintain these Minolta paper copiers which are imported for sale to the general public. No U.S. manufactured paper copiers are sold in Malawi and thus U.S. products could not be supported properly; no American made paper copier is represented in Malawi and none is foreseen for the immediate future.

B. A source/origin waiver to permit the purchase of up to \$300,000 of construction materials from A.I.D. Geographic Code 935 countries will also be required. The probable countries or origin for these commodities are the United Kingdom and the Republic of South Africa.

Approximately \$1,700,000 in construction materials will be needed for the project. An attempt will be made to purchase the maximum possible quantity from authorized AID Geographic Code 941 suppliers, possibly in Zimbabwe. However, as is the case in most countries formerly governed by the British, items manufactured in the U.S. are not normally compatible with the standards and specifications for construction and other materials used in Malawi. This is particularly the case for electrical equipment and plumbing fixtures to be procured for the project. Malawi uses a 220 volt, 50-hertz system which does not make the use of many U.S. manufactured products with electrical components possible. Thus, for example, equipment such as motors, switches and appliances must all be manufactured outside the U.S. to comport with existing Malawi facilities. Closely related to this is the capacity of Malawi to properly maintain and repair

equipment of U.S. source and origin. Since Malawi is on the metric system spare parts which can be purchased locally and facilities for repair work are most often not adaptable for use on U.S.-manufactured items.

Some of the needed materials, namely finished electrical fixtures and finished plumbing items, are not normally manufactured in neighboring Code 941 Countries or in Malawi, so it will be necessary to purchase up to \$300,000 worth of these materials from A.I.D. Geographic Code 935 source/origin countries. In addition to electrical and plumbing fixtures, it is expected that cement, reinforcing rod, roofing material, steel products, electrical cable and lumber products may also be purchased locally or from sources approved by this waiver.

VIII. RECEPTION AND UTILIZATION OF COMMODITIES

Commodities will be received and cleared through Customs by the University of Malawi acting for the Government of Malawi. Surveys and estimates for damaged commodities shipped from off-shore will be the joint responsibility of USAID and the Government of Malawi. Any insurance claims initiated will be forwarded to the PSA for notification of the appropriate Insurance Company.

The project officer and USAID will coordinate actions to insure that maintenance of project commodity records by the University, tracing the reception, distribution, and utilization of A.I.D.-funded material furnished for the activity.

IX. COMMODITY LIST

A. Local Procurement: (Shelf Items)	
Library furnishings and Equipment	\$35,028
Minolta EP 510 Plain Paper Copier Code 899	8,128
Inflation factor (20%)	8,631
Contingency	7,768
-Total Local Procurement	<u>\$59,555</u>
B. Off-Shore Procurement:	
Science Equipment	\$154,711
Furnishings, File Cabinets	50,050
Books	16,000
Inflation factor (20%)	44,430
Freight & PSA Fees (20%)	176,616
Contingency (15%)	47,985
-Total Off-Shore Procurement	<u>\$489,792</u>
C. Construction Materials:	
Code 941 Materials(Zimbabwe, Kenya, etc)	\$1,400,000
Code 935 Materials (UK,RSA)	300,000
-Total Construction Materials	<u>1,700,000</u>

GF Project Evaluation Summaries (PES)

A. General

Evaluation is a built-in and crucial component of this project. It is designed to insure that project purposes and assumptions as stated in the logical framework are being attained. It also attempts to measure what changes have taken place and the impact of the project over its life. Each evaluation will use the objectively verifiable indicators noted in the log frame (Annex A) but will not necessarily be limited to them, if in the judgment of the evaluation team, other indicators are useful. There are two evaluations planned during the five-year life of this project, as shown in table 11.

Table 11

Schedule of Project Evaluation

Type of Evaluation	Estimated Duration	Scheduled Period
Internal - AID and appropriate host country organizations plus computer specialist	3 weeks	No. 1 - FY 81 15 months after issuance of first AID Project Implementation Letter
External - AID funded experts in administering Engineering schools plus appropriate GOM, University and AID officials	4 weeks	No. 4 - FY 84 (April/May, 1984) Four years after signing first implementation letter (probably about 6 - 9 months before end of Project)

All team members selected for external evaluation will require approval of the resident AID representative in Malawi and the appropriate GOM authorities.

B. Scope

The specific items to be measure include, but are not limited to, the following:

- construction progress and quality
- performance of the Technical Assistance and Participant Training contractor

- + status of the existing physical plant and special equipment, effective utilization, physical condition, preventive and routine maintenance and calibration conditions, including adequacy of records
- accuracy of equipment inventory records
- effectiveness of AID funded Technical Assistance Staff
- promptness and effectiveness of AID backstop support to the project from Washington and the field
- Polytechnic, University and GOM support to the project
- effectiveness of the curriculum development program
- feasibility of utilizing a computer in Polytechnic's development
- effectiveness of the Career Guidance and Industrial Liaison Counselor and the industrial liaison program
- existence and adequacy of teaching staff evaluations
- textbook and library books acquisitions

C. Team Composition

The external evaluation teams should include:

- An educational systems' development specialist with experience in evaluation of complex education programs, preferably with engineering school and Third World experiences;
- A dean or senior professor of an engineering school familiar with curriculum development, laboratory equipment usage and evaluation techniques;
- An expert in educational systems evaluation with knowledge of computer applications, and modern university management practices;
- A senior librarian familiar with all phases of library functions, utilization, staffing, books and periodical acquisition, cataloging and storage and modern library practices; counseling-curriculum development programs; and development of data to support any prospective computer utilization and acquisition. This team is scheduled to spend four weeks in the field, followed in two weeks with a written report and recommendations.

D. Funding

Budgeting for the major external evaluation is calculated at \$10,000 per man month.

External Evaluation

4 people for one month @ \$10,000/mo.	40,000
Reports Reproduction	1,000

Internal Evaluation

To defray local miscellaneous costs plus one outside expert	25,000
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Contingency	<u>13,280</u>
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	<u>\$ 80,280</u>
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H. CONDITIONS & COVENANTS

In addition to the standard conditions precedent to disbursement concerning a legal opinion and the designation of official representatives, the GOM and the University of Malawi will provide, inform and substance satisfactory to AID, evidence of the annual recurrent budget projections required to support the recurrent costs associated with the total Polytechnic Expansion Plan, through 1987, including maintenance costs for the present and proposed new physical plant and equipment as a condition precedent to initial disbursement:

3. AID approval of plans, specifications, schedules, contracting procedures, IFBs, contracts and contractors is required as a condition to disbursement for architectural and engineering services and for construction services.

4. AID approval of commodity lists, specifications, IFBs, contracts and contractors is required as a condition to disbursement for commodity procurement.

These conditions precedent may be modified or waived as appropriate by the authorized AID official.

The GOM has agreed to the following covenants:

1. Subject to AID approval, the GOM will nominate Polytechnic candidates for long-term degree training in the United States on a timely basis, facilitate their processing for departure and upon completion of their training, assign or reassign such persons to positions and duties appropriate to their training to the Polytechnic engineering degree program.

2. The GOM will provide assurances that satisfactory housing is available for each technical assistance advisor prior to his or her arrival in Malawi.

3. Subject to AID approval, the GOM will, on a timely basis, provide AID with the qualifications, duties, periods of performance and officials requests for the technical assistance teachers/lectures required to support the Polytechnic engineering degree program.

4. The University of Malawi and the Polytechnic shall prepare and provide AID with a written policy statement, setting forth the short and long range physical and academic goals and objectives of the Polytechnic Master Expansion Plan in general, and the new engineering degree program specifically. This Polytechnic Expansion Policy Statement should include, but not limited to, the following:

a) The new role of Polytechnic as national center for technical data and its place within the University system.

b) A plan for continually updating the engineering curricula to meet Malawi's growing national development needs.

c) A plan for upgrading the qualifications and functions of the Malawian staff and effective use of and eventual phasing-out of the present expatriate staff.

d) A plan for improving recruitment and selection of engineering students, including encouragement of qualified female candidates.

e) Establishment of a permanent engineering, career guidance staff position at Polytechnic, filled initially by an appropriate technical assistance advisor.

ANNEX A - LOGICAL FRAMEWORK

GOAL	INDICATOR	MEANS OF VERIFYING	MAJOR ASSUMPTIONS
To alleviate the national shortage of skilled manpower	Reduction of skilled manpower shortage	<ol style="list-style-type: none">1. National Manpower Statistics (1980 Survey)2. Polytechnic Records	<ol style="list-style-type: none">1. Skilled manpower shortage will continue with national development and growth2. COM continues to attract and retain skilled manpower for its development programs.

PURPOSE	INDICATORS	MEANS OF VERIFYING	MAJOR ASSUMPTIONS
To improve and expand the institutional capability of the Polytechnic to produce Malawian engineering manpower for the public and private sectors	<ol style="list-style-type: none"> 1. Polytechnic graduates qualified to perform engineering services in public and private employment. 2. Polytechnic recognized as a technical resource to the engineering community. 3. Sufficiently qualified faculty (optimizing Malawi personnel) capable of teaching the expanded engineering program and providing consulting services to the engineering community. 4. A curriculum appropriate to adequately prepare Polytechnic graduates for employment and advance study. 5. Physical facilities sufficient to <ol style="list-style-type: none"> a) annually train 100 technicians, 75 diplomates, 25 engineers and 40 printing and telecom technicians and b) provide consulting services to the engineering community. 6. An administrative structure at Polytechnic capable of effectively implementing the expanded engineering program. 	<ol style="list-style-type: none"> 1. Public and private hiring records. 2. Polytechnic records of requests for consulting services. 3. Polytechnic records 4. Reports of the 2 external evaluation teams 5. Polytechnic Records 6. Polytechnic records and external evaluation reports. 	<ol style="list-style-type: none"> 1. All prospective donors follow through with indicated parallel assistance. 2. GOM budget support will be provided as planned. 3. University leadership continues to place high priority on quality development of Polytechnic and its relevancy to Malawi's needs. 4. Appropriate participants for training provided timely, in proposed numbers and reassigned to appropriate duties and responsibilities.

INPUTS	INDICATORS	MEANS OF VERIFYING	MAJOR ASSUMPTIONS
1. AID: (\$6.7 million)		AID and GOM project Agreement, etc.	Appropriate participants provided as planned
A. <u>Participant Training:</u>			
1. 55 person-years of long-term degree training in the U.S.	1. 1.5 million (rounded) Sixteen people, for average of 4 years each, at average annual cost of \$29,000		
B. <u>Capital Construction:</u>	B. \$ 3.9 million (rounded)		
1. An 18,000 sq. ft. Science Building,	1. 1.3 million (rounded)		
2. A 26,000 sq. ft. Library	2. 2.1 million (rounded)		
3. Four staff houses	3. .293 million (rounded)		
C. <u>Commodities/Equipment</u>	C. \$ 586 thousand (rounded)		
1. Science Lab	1. 366 thousand (rounded)		
2. Furniture, equipment and tools for the library	2. 219 thousand (rounded)		
3.			
E. <u>Technical Assistance:</u>	D. \$ 2.1 million (rounded)		
1. 13 person-years of long-term senior teaching positions at Polytechnic.	1. 2.1 million at \$168,500/year (AVG)		

OUTPUTS	INDICATORS	MEANS OF VERIFYING	MAJOR ASSUMPTIONS
1. Qualified students completing prescribed courses.	1. 50 degree engineers (25 annually) 150 engineering diplomates (75 annually)	1. Polytechnic records. 2. Polytechnic records.	1. All parallel donor inputs take place as planned.
2. Qualified and functional teaching staff with significant Malawian participation	200 engineering technicians (100 annually) a. Student attrition reduced by 10%	3. GOM and private industry records. 4. On-site inspections and professional judgements.	2. GOM and University budget support continues as planned 3. U.S. and U.K. influences on the continuing curriculum development proceeds effectively.
3. An effective and functioning 3 + 3 year "sandwich" curriculum producing employable graduates relevant to Malawi's needs.	2. 60 teachers and administrators, 66% of whom are Malawians and 33% of whom have post graduate degrees.	5. On-site inspections and professional judgements and Polytechnic records	4. Government parastatal and private industries' needs increase their requests for Polytechnic's services.
4. Functional teaching and consultative testing laboratories	3. 75% of graduates employed by GOM and 15% in private industry.	6. On-site inspections and professional judgements.	5. GOM and other donor's provide annual new book acquisitions as planned.
	4. 20 laboratories, adequately equipped and utilized.		6. Same as 1 above.
	5. 450 reader seating building with 90,000 volume storage capacity (75,000 book inventory)		
	6. Food and lodging accommodations for 1,000 full-time students		
	7. 4 Staff Houses		

JOB DESCRIPTIONSenior Teacher in Civil Engineering/ManagementResponsibilities

- a) Assist in developing a relevant curriculum and teach management sciences as a basic course prerequisite to obtaining an engineering degree. This includes modern operations research and management science techniques to solve practical engineering development problems.
- b) Train local counterparts as an on-going responsibility.
- c) Participate in selection of Engineering students for study at Polytechnic and abroad.

QualificationsEducation

B.S. in an engineering plus a M.S. in Business Administration or Management Sciences, including some training in computer applications from an accredited U.S. university.

Experience

- a) At least five years combined teaching experience in Civil engineering and management or business administration.
- b) At least two additional years involvement in planning curriculum development and teaching, in lesser developed countries.
- c) Familiarity with modern teaching techniques.
- d) Familiarity with audio visual teaching techniques.

JOB DESCRIPTIONSenior Teacher in Electrical/Electronics (Two)Responsibilities

- a) Responsible for teaching classroom and laboratory electrical/electronics courses for the engineering degree program.
- b) Work with the Dean of Engineering in revising curricula as necessary.
- c) Assist with evaluating the newly established curriculum.

Qualifications RequiredEducation

Masters or Ph.D. in electrical/electronic engineering from an accredited U.S. university.

Experience

- a) At least 3 years in industry coupled with at least five years teaching experience in electrical/electronic engineering.
- b) Knowledge of audio-visual techniques is mandatory.
- c) Actual teaching experience in a lesser developed country is desirable and will be a key factor in selection.
- d) Familiarization with use of modern electrical/electronic laboratory equipment.

JOB DESCRIPTION:Senior Teacher in Mechanical EngineeringResponsibilities

- a) Responsible for teaching both class and laboratory courses in mechanical engineering to undergraduate engineers for the engineering degree program.
- b) Evaluates the relevance of that curriculum to student and user needs.

Qualifications RequiredEducation

M.S. or Ph.D. in Mechanical Engineering from an accredited U.S. university.

Experience

- a) At least three years in industry coupled with at least three years teaching experience at the undergraduate levels in Mechanical Engineering.
- b) Experience in modern teaching techniques.
- c) Actual teaching experience in a lesser developed country is desirable and will be a plus factor in selection.

JOE DESCRIPTION

Technical Assistance Career Guidance Counsellor

Responsibilities

- a) Plan and initiate the function of career counselling for students and staff within the Polytechnic.
- b) Establish a records system capable of "tracking" a student through the Polytechnic and continuing as the student moves into a post-graduate work or position in government or industry.
- c) Serve as the Liaison Officer between the Polytechnic and the users of its output.
- d) Ensure that the proper administrative action is taken to make the job of Career Counsellor an approved staff position.
- e) Provide day-to-day counselling to the Polytechnic students.
- f) Assist in the development and implementation of appropriate and improved recruitment policies and procedures.

Qualification Required

Education

A Bachelor of Science (or higher) Degree in an engineering field relevant to the Polytechnic's program. At minimum a degree in a field related to career counselling.

Experience

- a) At least five years practical experience in career counselling in engineering schools in developed countries at least two in developing countries. If candidate has an engineering degree, the experience in counselling can be reduced to a total of 5 years.
- b) Experience as a teacher in an engineering/science oriented university is desirable.

EXPLANATORY NOTES FOR TECHNICAL ASSISTANCE1. Long-Term Technical Assistance

The estimate of the average cost of one person-year of long-term Technical Assistance from U.S. assumes an average assignment of 3 years and an average family size of 2 adults and 1 child with the total children being equally divided between primary and secondary school ages.

Average Annual Cost - FY-80

Salary	\$ 35,000
Transportation of personnel 1 RT/year for PCS, HL or R & R \$2,000 x 2.5	5,000
HHE Transportation (RT ÷ 3)	
Surface	5,500
Air	2,000
Transportation - Personal Car (3000 lbs. RT = 3)	1,500
U.S. Storage	250
Post Differential (10%)	3,500
One time soft furnishings allowance (\$ 2,400 ÷ 3)	800
Educational Travel and Educational Allowance	5,200
Transfer allowance:	
Wardrobe	200
Temporary lodging	275
Zone change and misc.	125
Fringe Benefits 25% x Salary	8,750
Overhead	
@ 75% Salary and Fringe Benefits	32,300
Miscellaneous	1,000
	<hr/>
	\$ 101,900
	<hr/>
Rounded to	\$ 102,000

The average annual cost for each subsequent fiscal year was determined by applying an average annual inflation rate of 20% as follows:

FY 81	FY 82	FY 83	FY 84
122,400	146,900	176,300	211,800

ESTIMATED SCHEDULING OF TECHNICAL ASSISTANCE PERSONNEL (Fiscal Years)Long-Term

	FY 1981	FY 1982	FY 1983	FY 1984	FY
1. Sr. Electrical/ Management Engineer	July	July			1
2. Sr. Electrical Engineer	July			July	3
3. Sr. Mechanical Engineer	July			July	3
4. Sr. Civil Engineer	July			July	3
5. Career Guidance Counsellor	July			July	3
	1.25 PY	4.75 PY	4 PY	3 PY	13 PY
estimated cost per FY (US DOLLARS)	122,400	146,900	176,300	211,600	
TOTALS	153,000	697,775	705,200	634,800	2,190,775

FIGURE C-2

TABLE C

ESTIMATED SCHEDULING OF PARTICIPANT TRAINING PERSONNEL (FISCAL YEARS)

Long Term - Degree

Candidate	Study Area	Degree	1980 (Aug)	1981	1982	1983	1984	PY
1. G. Kamwanja	Civil	BS						4
2. S. Zembere	Mech.	BS						4
3. B. Masamba	Elec.	BS						4
4. Chindebvu	Elec.	BS						4
5. S. Gwembere	Elec.	BS.						4
6. S. Ulemu	Elec.	BS.						4
7. M. Kaunda	Mech.	BS.						4
8. I. Mandauka	Mech.	BS.						4
9. M. Bizaliéle	Civil	BS.						4
10. D. Misoya	Telecom	BS.						4
11. L. Kazipe	Telecom.	BS.						4
12. Ms. D. Matiti	Lang.	MS.						2
13. Ms. B. Nkhata	Linguistics	MS.						2
14. S. Simango	Special Engl.	MS.						2
15. M. Mhango	Hydrology	PhD.						1
16. To be selected	Guidance	BA.						4
TOTAL			3.75	15.25	14	12.33	9.66	55 PY

Participant Training

Long-Term Participant Training (Degree)

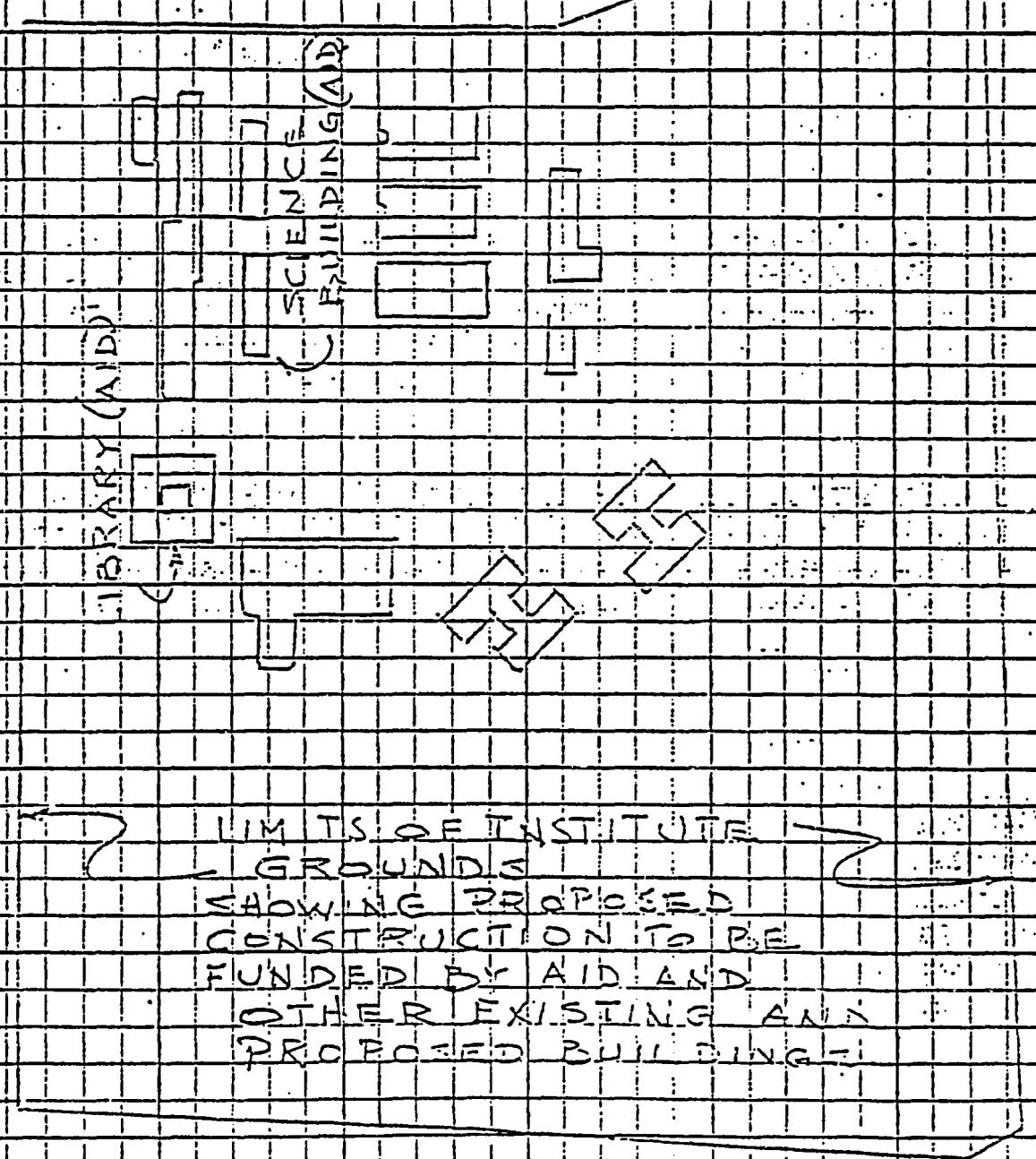
1. The average cost of one year of long-term training per person in the U.S. in FY 80 is estimated at \$19,200, plus 20% per year inflation in FY 81 and thereafter.

<u>FY 80</u>	<u>FY 81</u>	<u>FY 82</u>	<u>FY 83</u>	<u>FY 84</u>
\$ 19,200	23,100	27,600	33,120	39,750

2. Cost per year:

1980 = \$19,200 x 2.5 PY	\$	48,000
1981 = \$23,100 x 16 15.166	\$	350,330
1982 = \$23,100 x 12 15.25	\$	420,000
1983 = \$33,120 x 12.83	\$	425,710
1984 = 39,750 x 9		357,750
		<u>1,552,790</u>
	ROUNDED	1.6 MILLION

Cost estimates are in accordance with AFR/DR, Notice No. 80-4, dated December, 13, 1979, titled "FT-80 Participant Training Costs".





FRENCH
CULTURAL
CENTRE

CIVIC
CENTRE

INTERNATIONAL
POSTAL
SCHOOL

PROPOSED
COMMERCIAL
SCHOOL

MUSEUM

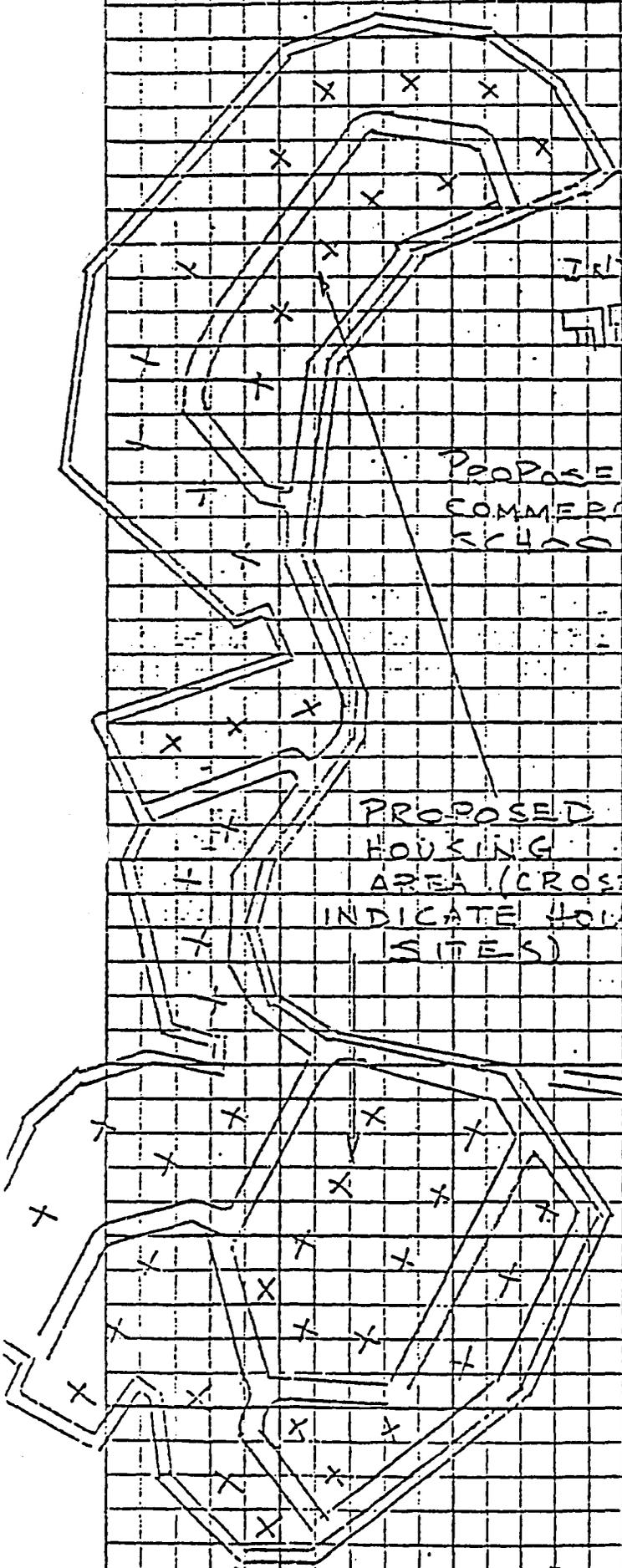
ADMARC

PROPOSED
HOUSING
AREA (CROSSES

INDICATE HOUSE
SITES)

TYPICAL HOUSE
FLOOR PLAN

CIVIC
CENTRE



DETAILED SCIENCE BLOCK EQUIPMENT LIST *ANNEX EA. Summary

Science Equipment	\$220,761
20% Inflation	44,430
60% Freight	176,608
15% Contingency	<u>47,985</u>
TOTAL	\$ 489,784

B. Equipment List

April 1981 Quotations

<u>Science:</u> (TEQUIPMENT INC.) ACTION, MASS.	<u>1980 CATALOG No.</u>	<u>AGGREGATE PRICE</u>
16 Worcester circuit boards	P52750	2,081
17 Resistors 1	PS94204	460
18 Resistors 2	P59440/9	487
17 Resistors 5	P59460/5	460
18 Resistors 10	P59480/0	487
11 Resistance boxes	P59860/9	2,126
10 Ammeter DC 10mA	P79030/3	1,223
10 Ammeters DC 100mA	P74050/9	1,256
6 Ammeters DC 1A	P79390/0	539
5 Ammeters DC 5A	P79410/2	450
10 Ammeters DC 15A		1,052
10 Voltmeters DC 1mV		1,260
10 Voltmeters DC 100mV		1,260
10 Voltmeters DC 500mV		1,260
10 Voltmeters DC 1V		1,260
10 Lead-acid cells	P68100	572
8 Ni-Fe cells	P68440/0	848
20 Simple cell P51600/9; P51620/6, P51660/6		255
2 Leclanche cell		50
10 Meter-wire bridge	P58060/6	1,677

2. For the Science Block equipment procurement

* Please note that this list is illustrative and many be modified by the GOM in collaborative with the long-term technicians.

QUANTITY	ITEM	CATALOG NO.	COST
12	Temp. coeff. of resist app.	P57300/6	456
3	Model power line	P54030/9	287
2	Deflection magnetometer	P47390/3	294
3	Tangent galvo	P57480/1	279
3	Force-on-conductor app.	P55510/7	168
1	Barlow's wheel	P55600/8	106
3	Faraday Rotary Wire	P55560/0	157
3	Faraday Rotary Magnet		300
2	Model Motor)	P56160/0	208
3	Model Dynamo)	P56160/0	208
12	Avometer	P31250/5	4,275
2	Demo. transformer & Accessories and Westminster	P55010/9	1,710
5	or Worcester E/M Kit	P54530/3	1,182
2	Waltenhafens pendulum	P55190/4	200
2	Max/Min Thermometers (F)	C79730/9	37
2	Max/Min Thermometers (S)	C79760/4	52
2	Ray-box	P35560/9	391
8	Plane mirror	P30620/9	58
12	Rectangular Glass Blocks	P33900/9	127
16	Semi-circular Glass Block 60° Prisms (large)	P33960/5	131
12	60° Prisms (small)	P34560/5	472
12	45° Prisms	P34620/3	457
12	Concave Mirror 50 cm	P31430/3	120
12	Convex Mirror 20 cm	P31700/2	120

QUANTITY	ITEM	CATALOG NO.	COST
12	Convex mirror 50 cm	P31760/9	120
2	Nexton's disc	P29820/0	111
10	Spectrometer	P40830/5	9,272
1	Spectrometer Neon		158
1	Spectrometer Helium		158
2	Spectrometer Hydrogen		436
1	Spectrometer Argon		138
10	Spectrometer Sodium	P41290/4	1,594
3	Color mixing apparatus	P39970/5	195
19	Ripple tank and accessories	P43180/7	898
21	3cm wave app. P53400/9, P43540/0 P43720/2	P43580/1 P43620/9	820
7	Tuning-fork sets	P44510/7	623
14	Resonance tubes	P45290/2	225
7	Sonometer	P44050/9	670
3	Melde's apparatus	P44590/9	430
2	Vel. of sound app.		217
3	Kundt's tube	P45050/4 & P45070/9	442
2	Polarisation demo.		443
2	Plastic waves	P33770/3	336
20	Metric rule	C48960/0	101
3	Vernier caliper	C48500/9	101
8	Micrometer screw gauge	C43540/0	591
20	Taper gauge		263
14	S. W. Gauge		90
15	Travelling microscope	C38220/6	86

QUANTITY	ITEM	CATALOG NO.	COST
12	Spring balance (250g)	P10360/2	162
4	Spring balance (500g)	P10900/4	56
11	Spring Balance (1000g)	P109200/9	154
33	Pulleys (single)	P13510/6	334
22	Pulleys (double)	P13570/2	312
36	Pulleys (treble)	P13710/3	634
12	Pulleys bench-clamping	P13870/3	358
19	Fletcher's trolley		3, 575
6	Kinetics trolley	P17070/2	585
10	Weights and hangers	P12340/2	247
12	Boxed weights	C12340/9	1,928
3	Ticker timer	P17500/1	260
12	Friction Block)	P18760/9	490
12	Friction Track)		
12	Pan	P14200/7	59
3	'g' by free fall app.	P19310/4	556
2	Scaler Timer	P67340/3	945
1	Centisecond timer		264
16	Stop-watch	C30640/9	1,038
2	Moment-of-force wheel	Z 99999/3	20
16	Inclined plane	P18640/0	1,104
19	Wheel and axle	P14610/4	640
3	Model screw-jack	P14470/3	648
2	Model Bramah press	P22160/6	80
2	Differential wheel and axle	P14570/7	367
2	Train of gear-wheel		1,222
9	Thermometer (mercury in glass) (100°C)	C79400/7	51

QUANTITY	ITEM	CATALOG NO.	COST
16	Thermometer (mercury in glass (200°C))	C79420/2	108
14	Thermometer (mercury in glass) (240°C)	C79620/9	87
3	Thermometer Clinical	C79840/2	13
1	Thermometer mercury in steel		50
2	Thermometer resistance	P47380/3	147
3	Thermocouple	P47060/1	26
2	Thermopile	P57200/2	210
3	Total radiation pyrometer		
2	Bar and gauge	P24410/2	58
1	Ball and ring	P24370/5	22
1	Bi-metal strip	P24590/3	17
3	Model fire alarm) bi-		177
3	Model thermostat) metal		328
1 1/4	Linear expansivity apparatus	P24510/6	415
1	Kinetic theory apparatus	P24130/7	186
19	Brownian motion apparatus	P24270/1	833
11	Calorimeter	P26330/3	556
12	Steam generator	P27190/7	50
12	Steam trap	P27330/3	81
10	Direct-reading balance	C13440/3	144
18	Boyle's Law apparatus	P31920/9	475
15	Charles' Law apparatus	P25090/4	524
19	Hygrometers Regnault	P25510/0	075
2	Hygrometers W & D bulb	B17420/4	45

QUANTITY	ITEM	CATALOG NO.	COST
2	Hygrometers hair	B17300/3	309
3	Conductivity rods	P27610/3	42
2	Ingenhausz apparatus	P27370/7	104
3	Convection apparatus	P28330/2	63
2	Model hot water system		1,000
18	Leslie's cubes	P23410/3	567
2	Callendar friction-belt		1,500
3	Searles conductivity app.	P27910/4	567
3	Model bevel gear	P14310/1	4,704
3	Model worm and screw	P14910/5	224
3	Model differential	P14350/2	442
2	Model force pump	P22240/4	63
2	Model lift pump	P22200/3	56
2	Steelyard		283
2	Model hydraulic brake		663
6	Retort stand	C69260/0	160
10	Boss head	C69720/3	266
10	Clamp	C69640/9	69
1	Young's modulus apparatus	P20590/9	107
	Torsion disc for rigidity mod		142
20	Inertia balance	P19210/2	190
2	Centripetal force app.	P18030/9	65
1	Spherometer	P33760/3	32
3	Slow A.C. Generator	P56330/3	66

QUANTITY	ITEM	CATALOG NO.	COST
8	S/B Oscilloscope	P63870/0	6,260
15	Capacitance boxes		1,517
20	Inductance boxes		2,268
3	High-vac discharge	P64420/7	340
3	Perrin	P64640/9	506
2	Diode	P64480/3	244
2	Triode	P64520/0	287
3	Maltese cross	P64600/9	496
3	Paddle wheel		496
2	E.H.T. Unit	P70300/5	729
8	Power Packs 0-350	P69980/4	729
10	Electronics kit		1,385
9	Portable Wheatstone bridge	P60170/1	3,564
7	Portable potentiometer		2,663
20	Tube-characteristics app. Diode	P61900/6	442
20	Tube-characteristics app. Triode		822
20	Multiminor meters	P81210/4	320
3	Radioactivity kit		617
20	A.C. Ammeters 0-5A		3,166
4	A.C. Ammeters 0.10A		323
20	A.C. Ammeters 0-15A		971
20	A.C. Voltmeters 0-5V		761
20	A.C. Voltmeters 0-10V		761
4	A.C. Voltmeters 0-15V		394
8	Standard Cell (Weston)	P52170/5	669
			220,761
	TOTAL		

Detailed Library Furniture and
Equipment Cost Estimates

A. Summary of Costs (S.U.S. @ August 1979 Quotations).

1. Local Procurement:

Purchase Price	43,156	59,555
20% Inflation (30 months to contract) @ 1.66% per month)	8,631	
15% CONTINGENCY	7,768	

2. Off-Shore Procurement:

Purchase Price	72,550	
20% Inflation Factor	18,137	160,389
80% Sea Freight	31,352	
15% CONTINGENCY	24,666	

~~15% Contingency~~

TOTAL \$219,944

B. Local Procurement

Dictionary Stands	2	563
Atlas Stand	1	438
Newspaper racks	3	863
Double tier Index Tables	2	875
Consultant Table	1	188
Book Trucks	5	938
Depressible Book Truck	1	438
Charging Desk 7 Sections	7	2,625
Tables (6 people ea.)	49	7,350
Single Library Chairs	395	19,750
Classroom Chairs	20	1,000
Minolta EP510 plain Paper Copier	1	8,128
		<hr/>
	Sub-Total	43,156

C. Off-Shore (U.S.) Procurement

<u>Quantity</u>	<u>Description</u>	<u>Unit Cost</u>	<u>Total</u>
3,200	Overhead, wire book supports	\$ 0.95	\$ 3040
55	90 inch, steel book shelving; six shelves, double faced 15 foot lengths	182 per 3 ft. sections or \$190/15 ft. sections	50,050
2	60 drawer card catalogs	1,222	\$ 2,444
1	Metal book shelf, 82 in. high	196	196
4	Metal file cabinets, 5-drawer legal size	205	820
1,000	Books (average cost per unit)	16	<u>16,000</u>
		TOTAL	\$ 72,550

Other Donors Contributions

1. Since independence in 1964, the British Government has regularly provided funds and personnel for Malawi's development needs. Presently 24 of the 36 University teaching positions at Polytechnic are funded and staffed by the British Government. As part of the Polytechnic Master Development Plan, The Overseas Development Agency, in addition to funds already committed, has proposed financing new costs as follows.

Construction (\$2.0 million)

- a. one 250-bed hostel
- b. one cafeteria, kitchen and student union block and
- c. three senior staff houses
- d. one engineering workshop
- e. renovations to existing labs, workshops and classrooms.

Commodities and equipment are estimated at \$327,600. It is expected that these ODA funds (approximately \$2.7 million) will become available at approximately the same time as the AID funds

2. The European Development Fund (EDF) of the European Economic Commission has proposed a new grant of approximately ECU 650 thousand for a 250 bed hostel, external works and contingencies. EDF is presently fully-funding two teaching positions in accountancy at Polytechnic at costs of \$225,000.

3. The African Development Fund plans to contribute \$5.8 million as follows:

Construction (\$ 4.5 million)

- a. one hostel
- b. eight staff houses
- c. one student union hall
- d. one lecture hall
- e. one civil engineering workshop
- f. renovations to existing labs, workshops, classrooms
- g. A & E services

ADF financed furniture and equipment are estimated at \$316 thousand and technical assistance at \$461 thousand.

WAIVER JUSTIFICATIONS

1. A waiver from AID Geographic Code 941 to Code 935 is necessary to permit procurement of up to \$300,000 in construction materials from Code 935 countries.
2. A Proprietary Procurement Waiver and an expansion of the \$2,500 shelf item limitation for local procurement is necessary to permit procurement of a minolta paper copier costing approximately \$8,200.

B. JUSTIFICATION1. Waiver to Code 935 for Construction Materials

A source/origin waiver to permit the purchase of up to \$300,000 of construction materials from A.I.D. Geographic Code 935 countries will also be required. The probable countries or origin for these commodities are the United Kingdom and the Republic of South Africa.

Approximately \$1,700,000 in construction materials will be needed for the project. An attempt will be made to purchase the maximum possible quality from authorized AID Geographic Code 941 suppliers, possibly in Zimbabwe. However, as is the case in most countries formerly governed by the British, items manufactured in the U.S. are not normally compatible with the standards and specifications for construction and other materials used in Malawi. This is particularly the case for electrical equipment and plumbing fixtures to be procured for the project. Malawi uses a 220 volt, 50-hertz system which does not make the use of many U.S. manufactured products with electrical components possible. Thus, for example, equipment such as motors, switches and appliances must all be manufactured outside the U.S. to comport with existing Malawi facilities. Closely related to this is the capacity of Malawi to properly maintain and repair equipment of U.S. source and origin. Since Malawi is on the metric system spare parts which can be purchased locally and facilities for repair work are most often not adaptable for on U.S.-manufactured items.

Some of the needed materials, namely finished electrical fixtures and finished plumbing items, are not normally manufactured in neighboring Code 941 Countries or in Malawi, so it will be necessary to purchase up to \$300,000 worth of these materials from A.I.D. Geographic Code 935 source/origin countries. In addition to electrical and plumbing fixtures, it is expected that cement, reinforcing rod, roofing material, steel products, electrical cable and lumber products may also be purchased locally or from sources approved by this waiver.

2. Proprietary Procurement Waiver For Paper Copier

(a) A Proprietary Procurement Waiver to permit the local purchase of one Japanese made A.I.D. Geographic Code 935 Minolta Model EP 510 plain paper copier at the cost of approximately \$8,200, and expansion of the \$2,500 shelf item limitation for local procurement will be required. With approval of this Proprietary Waiver the purchase will be made in Malawi. The justification for this request is based upon the criteria of HB 15 Chapter 3 para C4C3, compatibility with equipment on hand.

The Malawi Polytechnic, as well as other governmental institutions, now uses exclusively Minolta paper copiers for reproduction and document development needs. Moreover, adequate service and spare parts are on hand in Malawi to properly maintain these Minolta paper copiers which are imported for sale to the general public. No U.S.-manufactured paper copiers are sold in Malawi and thus U.S. products could not be supported properly; no American made paper copier is represented in Malawi and none is foreseen for the immediate future.

FOREIGN ASSISTANCE ACT

SECTION 611 (e)

CERTIFICATION

As the officer serving as principal representative of the Agency for International Development in Malawi, having taken into account the maintenance and utilization of projects in Malawi previously financed or assisted by the United States, particularly the Chikwawa - Bangula Road, the Lilongwe - Mchinji Road and the Bunda College projects, and the performance of the Ministry of Agriculture and Natural Resources and Ministry of Works with regard to previous and on-going AID projects in Malawi, I hereby certify that in my judgement the Government of Malawi has the financial and human resource capabilities to effectively maintain and utilize the capital assistance to be carried out under this Project.

Thurman L. C. Anderson

April 21 1980
Date

EC(1) - COUNTRY CHECKLIST

Listed below are, first, statutory criteria applicable generally to FAA funds, and then criteria applicable to individual fund sources: Development Assistance and Security Supporting Assistance funds.

A. GENERAL CRITERIA FOR COUNTRY

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in consistent pattern of gross violations of internationally recognized human rights? YES
2. FAA Sec. 481. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully? NO
3. FAA Sec. 620(a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba? NO
4. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the International Communist movement? YES
5. FAA Sec. 620(c). If assistance is to 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) debt is not denied or contested by such government? NO
6. 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

7. FAA Sec. 620(f); App. Sec. 109. Is recipient country a Communist country? Will assistance be provided to the Democratic Republic of Vietnam (North Vietnam), South Vietnam, Cambodia or Laos? NO
8. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? NO
9. 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
10. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? NO
11. FAA Sec. 620(o); Fishermen's Protective Act, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters, NO such action
- a. has any deduction required by Fishermen's Protective Act been made?
- b. has complete denial of assistance been considered by AID Administrator?
12. FAA Sec. 620(q); App. Sec. 504. (a) Is the government of the recipient country in default on interest or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds, unless debt was earlier disputed, or appropriate steps taken to cure default? NO
- *13. FAA Sec. 620(s). "If contemplated assistance is development loan (including Alliance loan) or security supporting assistance, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount spent for the purchase of sophisticated weapons systems?" (An affirmative answer may refer to the record of the taking into account, e.g.: "Yes as reported in annual report on implementation of Sec. 620(s)." This report is prepared at the time of approval by the Administrator of the Operational Year Budget. * YES

* Upward changes in the Sec. 620(s) factors occurring in the course of the year, of sufficient significance to indicate that an affirmative answer might need review should still be reported, but the statutory checklist will not normally be the preferred vehicle to do so.) *

14. FAA Sec. 620(c). 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
15. 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? Not in arrears
16. FAA Sec. 620A. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? NO
17. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA? NO
18. FAA Sec. 669. Has the country delivered or received nuclear reprocessing or enrichment equipment, materials or technology, without specified arrangements on safeguards, etc.? NO
19. FAA Sec. 901. Has the country denied its citizens the right or opportunity to emigrate? NO

FUNDING CRITERIA FOR COUNTRY

1. Development Assistance Country Criteria

a. FAA Sec. 102(c), (d). Have criteria been established, and taken into account, to assess commitment and progress of country in effectively involving the poor in development, on such indexes as: (1) small-farm labor intensive agriculture, (2) reduced infant mortality, (3) population growth, (4) equality of income distribution, and (5) unemployment.

YES

b. FAA Sec. 201(b)(5), (7) & (8); Sec. 208; 211(a)(4), (7). Describe extent to which country is:

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

Large National Rural Development Project making substantial progress toward these ends.

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

private foreign and domestic investment strongly encouraged and supported, e.g., Viphya pulp mill

(3) Increasing the public's role in the developmental process.

local groups involved in NRDP decisions.

(4) (a) Allocating available budgetary resources to development.

GOM continues to maximize development budget with fiscal responsibility.

(b) Diverting such resources for unnecessary military expenditure and intervention in affairs of other free and independent nations.

No such diversion

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

land tenure initiatives addressed by NRDP.

Significant respect for and liberalization of personal freedoms.

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

Development-Policy Statement, Long-range development plans, and special projects.

c. FAA Sec. 201(b), 211(a). Is the country among the 20 countries in which development assistance loans may be made in this fiscal year, or among the 40 in which development assistance grants (other than for self-help projects) may be made?

YES

d. FAA Sec. 115. Will country be furnished, in same fiscal year, either security supporting assistance, or Middle East peace funds? If so, is assistance for population programs, humanitarian aid through international organizations, or regional programs?

NO

2. Security Supporting Assistance Country Criteria

N/A

a. FAA Sec. 502B. Has the country engaged in a consistent pattern of gross violations of internationally recognized human rights? Is program in accordance with policy of this Section?

b. FAA Sec. 531. Is the Assistance to be furnished to a friendly country, organization, or body eligible to receive assistance?

c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special

5C(2) - PROJECT CHECKLIST

Listed below are, first, statutory criteria applicable generally to projects with FAA funds, and then project criteria applicable to individual fund sources: Development Assistance (with a sub-category for criteria applicable only to loans); and Security Supporting Assistance funds.

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

A. GENERAL CRITERIA FOR PROJECT.1. App. Unnumbered; FAA Sec. 653(b)

(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project;
(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure plus 10%)?

FY80 Congressional Presentation

YES

- 2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

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?

None required

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per Memorandum of the President dated Sept. 5, 1973 (replaces Memorandum of May 15, 1962; see Fed. Register, Vol 28, No. 174, Part III, Sept. 10, 1973)?

Not water or water-related

- 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 the country's capability effectively to maintain and utilize the project?

YES

6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multi-lateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. If assistance is for newly independent country, is it furnished through multi-lateral organizations or plans to the maximum extent appropriate?

provides central service function for NREP and ag. sector

not newly independent

7. FAA Sec. 601(a); (and Sec. 201(f) for development loans). 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; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

- a) promote ag. exports
- b) promote small holder production
- c) N/A
- d) N/A
- e) improve agriculture
- f) N/A

8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade 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. research equipment
U.S. Title XII institution will implement possible; U.S. construction firm

9. FAA Sec. 612(b); Sec. 636(h). 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 to meet the cost of contractual and other services.

substantial 15 percent contribution to project by RREP

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency and, if so, what arrangements have been made for its release?

NO

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(c); Sec. 111; Sec. 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production, spreading investment out from cities to small towns and rural areas; and (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions?

- a) small holder farmers are direct primary beneficiaries through improved agriculture
- b) N/A

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: [include only applicable paragraph -- e.g., a, b, etc. -- which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.]

(1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers;

N/A

(2) [104] for population planning or health; if so, extent to which activity extends low-cost, integrated delivery systems to provide health and family planning services, especially to rural areas and poor;

N/A

(3) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;

Provides in-country capability to produce engineers for rural development heretofore unavailable in Malawi.

(4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

N/A

(a) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

(b) to help alleviate energy problem;

(c) research into, and evaluation of, economic development processes and techniques;

(d) reconstruction after natural or manmade disaster;

(e) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(f) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

(5) [107] by grants for coordinated private effort to develop and disseminate intermediate technologies appropriate for developing countries.

c. FAA Sec. 110(a); Sec. 208(e). Is the recipient country willing to contribute funds to the project, and in what manner has or will it provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

Malawi is RLDC and making 25 percent contribution

d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing?

Yes

e. FAA Sec. 207; Sec. 113. Extent to which assistance reflects appropriate emphasis on: (1) encouraging development of democratic, economic, political, and social institutions; (2) self-help in meeting the country's food needs; (3) improving availability of trained worker-power in the country; (4) programs designed to meet the country's health needs; (5) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (6) integrating women into the recipient country's national economy.

improved formal educational standards and increased trained manpower for Engineering Industrial, Governmental and Agricultural Development needs.

f. FAA Sec. 291(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 civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

Increases indigenous skilled manpower through Local Educational Institutions.

FAA Sec. 201(b)(2)-(4) and -(8); Sec. 201(e); Sec. 201(a)(1)-(3) and -(8). 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; or of educational or other institutions directed toward social progress? Is it related to and consistent with other development activities, and will it contribute to realizable long-range objectives? And does project paper provide information and conclusion on an activity's economic and technical soundness?

YES

FAA Sec. 201(b)(6); Sec. 211(a)(5), (6) information and conclusion on possible effects of the assistance on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving or safeguarding the U.S. balance-of-payments position.

likely follow-on demand for private U.S. expertise in educational development and for goods and services related to Technical Education.

Development Assistance Project Criteria (Loans only)

N/A

a. FAA Sec. 201(b)(1). Information and conclusion on availability of financing from other free-world sources, including private sources within U.S.

b. FAA Sec. 201(b)(2); 201(d). Information and conclusion on (1) capacity of the country to repay the loan, including reasonableness of repayment prospects, and (2) reasonableness and legality (under laws of country and U.S.) of lending and relending terms of the loan.

c. FAA Sec. 201(e). If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to AID an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?

d. FAA Sec. 201(f). Does project paper describe how project will promote the country's economic development taking into account the country's human and material resources requirements and relationship between ultimate objectives of the project and overall economic development?

e. FAA Sec. 202(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources?

f. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, 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?

3. Project Criteria Solely for Security Supporting Assistance

N/A

FAA Sec. 531. How will this assistance support promote economic or political stability?

4. Additional Criteria for Alliance for Progress

N/A

[Note: Alliance for Progress projects should add the following two items to a project checklist.]

a. FAA Sec. 251(b)(1), -(8). Does assistance take into account principles of the Act of Bogota and the Charter of Punta del Este; and to what extent will the activity contribute to the economic or political integration of Latin America?

b. FAA Sec. 251(b)(8); 251(h). For loans, has there been taken into account the effort made by recipient nation to repatriate capital invested in other countries by their own citizens? Is loan consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress (now "CEPCIES," the Permanent Executive Committee of the OAS) in its annual review of national development activities?

SC(3) - STANDARD ITEM CHECKLIST

ANNEX-2-11

Listed below are 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 exclusion (as where certain uses of funds are permitted, but other uses not)..

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 goods and services financed? YES
2. FAA Sec. 604(a). Will all commodity procurement financed 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 U.S. marine insurance companies, will agreement require that marine insurance be placed in the U.S. on commodities financed? No discrimination
4. FAA Sec. 604(e). 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? No such financing
5. FAA Sec. 609(a). Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items? YES
6. FAA Sec. 901(b). (a) Compliance with requirement 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. will be applied
7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, YES

are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

8. International Air Transport. Fair Competitive Practices Act, 1974

If air transportation of persons or property is financed on grant basis, will ~~provision be made that U.S.-flag carriers will be utilized to the extent such service is available?~~ YES

B. Construction

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest? YES (GOM contributing engineering services)

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? will not exceed \$100,000,000

C. Other Restrictions

1. FAA Sec. 201(d). 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 preclude promoting or assisting the foreign aid projects or activities of Communist-Bloc countries, contrary to the best interests of the U.S.? YES

4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the U.S. or guaranty of such transaction? NO

c.

5. Will arrangements preclude use of financing:
- a. FAA Sec. 114. to pay for performance of abortions or to motivate or coerce persons to practice abortions? YES
 - b. FAA Sec. 620(q). to compensate owners for expropriated nationalized property? YES
 - c. FAA Sec. 650. to finance police training or other law enforcement assistance, except for narcotics programs? YES
 - d. FAA Sec. 662. for CIA activities? YES
 - e. App. Sec. 103. to pay pensions, etc., for military personnel? YES
 - f. App. Sec. 106. to pay U.N. assessments? YES
 - g. App. Sec. 107. to carry out provisions of FAA Sections 209(d) and 251(h)? (transfer to multilateral organization for lending). YES
 - h. App. Sec. 501. to be used for publicity or propaganda purposes within U.S. not authorized by Congress? YES

UNCLASSIFIED
Department of State

INCOMING
TELEGRAM

PAGE 01 LILONGWE 171386Z
ACTION AID-35

027078 AID2694

LILONGWE 01701 171386Z

027078 AID2694

ACTION OFFICE AFSA-03
INFO AAAP-01 AFEA-03 AFOR-06 GC-01 GCAF-01 GCFL-01 ENGR-02
CMB-01 RELO-01 MAST-01 AFDA-01 /022 A2 0

INFO OCT-01 /036 W

-----026893 171332Z /40

O P 170804Z JUL 80
FM AMEMBASSY LILONGWE
TO SECSTATE WASHDC IMMEDIATE 4976
INFO AMEMBASSY MBABANE PRIORITY
AMEMBASSY NAIROBI PRIORITY
AMEMBASSY SALISBURY

UNCLAS LILONGWE 1701

AIDAG SECSTATEFOR AFR/SA; NAIROBI FOR REDSO;MBABANE
FOR RLA

C O R R E C T E D C O P Y (TEXT)

E.O. 12865: N/A

SUBJ: MALAWI POLYTECHNIC

REF: (A) NAIROBI 12695 (0) STATE 180209

1. MINISTRY OF WORKS (MOW) 31MAY1980 SURVEY OF FIRMS REGISTERED UNDER CONSULTANTS AND CONTRACTORS ACT 1968 DOES NOT RPT NOT IDENTIFY FIRMS OUTSIDE OF MALAWI NOR DOES MOW RECOLLECT ZIMBABWE FIRMS THAT DO BUSINESS IN MALAWI. RATHER, THERE ARE FIRMS THAT WORK IN BOTH COUNTRIES.
 2. COMPANIES DULY REGISTERED ARE CONSIDERED MALAWIAN COMPANIES EVEN THOUGH TH HOME OFFICE OF THE COMPANY MAY BE OUTSIDE MALAWI BORDERS.
 3. UNDER THE 1968 ACT MALAWI HAS DULY REGISTERED 19 COMPANIES AS QUOTE UNLIMITED COMPANIES END QUOTE WHICH MEANS THE COMPANIES ARE CERTIFIED CAPABLE OF CONSTRUCTION BUSINESS VALUED A MALAWI KWACHA ONE MILLION AND ABOVE. FOUR ADDITIONAL COMPANIES ARE CERTIFIED CAPABLE OF CONSTRUCTION BUSINESS BETWEEN MALAWI KWACHA 500 THOUSAND AND MALAWI KWACHA ONE MILLION. THE LIST CONTINUES.
 4. TENDERS FOR ALL MALAWIAN CONSTRUCTION, NOT TO BE PERFORMED BY MINISTRY OF WORKS, ARE ADVERTISED WITHIN COUNTRY AND THROUGH NORMAL INTERNATIONAL CHANNELS.
 5. S.R. NICHOLAS, A REGISTERED UNLIMITED CONSTRUCTION COMPANY IS CURRENTLY THE WINNER OF BID FOR CONSTRUCTION OF THE 250 BED HOSTEL FUNDED BY EDF; A SIMILAR HOSTEL FUNDED BY ODA AND AN ENGINEER'S WORKSHOP FUNDED BY ODA; ALL AT THE POLYTECHNIC. AT THE TIME OF APPROVAL OF A.I.D.'S INV'Y, THE GOVERNMENT WILL AGAIN ADVERTISE FOR TENDERS AGAINST THE AID PROPOSED FUNDED CONSTRUCTION THROUGH INCOUNTRY AND INTERNATIONAL CHANNELS.
 6. MOST OF THE CONSTRUCTION MATERIALS ARE SHELF ITEMS AND WILL NOT BE IMPORTED DIRECTLY FOR THIS PROJECT. CEMENT AND BRICKS ARE AVAILABLE IN MALAWI. STEEL AND PIPES ARE IN THE MAIN, ON THE SHELVES.
 7. BELIEVE ABOVE SUFFICIENT TO RECONSIDER WHETHER CONSTRUCTION WAIVER REALLY REQUIRED CONSIDERING MALAWI CERTIFICATIONS AND REGULATIONS.
 8. WOULD APPRECIATE SOONEST RESPONSE FROM RLA AND NAIROBI CIVIL ENGINEER. PLEASE ACTION AFR/SA INFO LILONGWE.
 9. FOR NAIROBI: HERB BLANK IS IN THE FIELD NOT TO RETURN TO LILONGWE BEFORE JULY 25.
- MORAN

9.

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PAGE 01 LILONG 01701 170839Z
ACTION AID-35

026872 AID2601

ACTION OFFICE AFSA-03
INFO AAAP-01 AFEA-03 AFDR-06 GC-01 GCAF-01 GCFL-01 ENGR-02
CH8-01 RELO-01 MAST-01 AFDA-01 /022 A2 O

INFO OCT-01 SSO-00 SVC-00 /030 W
-----025581 170848Z /12

O P 170804Z JUL 80
FM AMEMBASSY LILONGWE
TO SECSTATE WASHDC IMMEDIATE 4978
INFO AMEMBASSY MBABANE PRIORITY
AMEMBASSY NAIROBI PRIORITY
AMEMBASSY SALISBURY

UNCLAS LILONGWE 1701

AIDAC SECSTATEFOR AFR/SA; NAIROBI FOR REDSO; MBABANE
FOR RLA

E. O. 12065: N/A

SUBJ: MALAWI POLYTECHNIC

REF: (A) NAIROBI 12695 (B) STATE 180209

1. MINISTRY OF WORKS (MOW) 31MAY1980 SURVEY OF FIRMS REGISTERED UNDER CONSULTANTS AND CONTRACTORS ACT 1968 DOES NOT RPT NOT IDENTIFY FIRMS OUTSIDE OF MALAWI NOR DOES MOW RECOLLECT ZIMBABWE FIRMS THAT DO BUSINESS IN MALAWI. RATHER, THERE ARE FIRMS THAT WORK IN BOTH CCOUNTRIES.
2. COMPANIES DULY REGISTERED ARE CONSIDERED MALAWIAN COMPANIES EVEN THOUGH TH HOME OFFICE OF THE COMPANY MAY BE OUTSIDE MALAWI BORDERS.
3. UNDER THE 1968 ACT MALAWI HAS DULY REGISTERED 19 COMPANIES AS QUOTE UNLIMITED COMPANIES END QUOTE WHICH MEANS THE COMPANIES ARE CERTIFIED CAPABLE OF CONSTRUCTION BUSINESS VALUED A MALAWI KWACHA ONE MILLION

(#)

5. S. R. NICHOLAS, A REGISTERED UNLIMITED CONSTRUCTION COMPANY IS CURRENTLY THE WINNER OF BID FOR CONSTRUCTION OF THE 250 BED HOSTEL FUNDED BY EDF; A SIMILAR HOSTEL FUNDED BY ODA AND AN ENGINEER'S WORKSHOP FUNDED BY ODA; ALL AT THE POLYTECHNIC. AT THE TIME OF APPROVAL OF A. I. D.'S INPUT, THE GOVER
OLL AGAIN ADVERTISE
FOR TENDERS AGAINST THE AID PROPOSED FUNDED CONSTRUCTION THROUGH INCOUNTRY AND INTERNATIONAL CHANNELS.
6. MOST OF THE CONSTRUCTION MATERIALS ARE SHELF ITEMS AND WILL NOT BE IMPORTED DIRECTLY FOR THIS PROJECT. CEMENT AND BRICKS ARE AVAILABLE IN MALAWI. STEEL AND PIPES ARE IN THE MAIN, ON THE SHELVES.
7. BELIVE ABOVE SUFFICIENT TO RECONSIDER WHETHER CONSTRUCTION WAIVER REALLY REQUIRED CONSIDERING MALAWI CERTIFICATONS AND REGULATIONS.
8. WOULD APPRECIATE SOONEST RESPONSE FROM RLA AND NAIRIBI CIVIL ENGINEER. PLEASE ACTON AFR/SA INFO LILONGWE.
9. FOR NAIROBI: HERB BLANK IS IN THE FIELD NOT TO RETURN TO LILONGWE BEFORE JULY 25.
HORAN

NOTE BY OC/T: LILONG23 1701. (#) PARA 3 OMISSION. CORRECTION TO FOLLOW.

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ACTION AID-58

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INFO SECT-01 /001 A1 4

INFO DCT-01 AF-10 ED-00 INR-10 INRE-00 CIAE-00 DODE-00
(AS-01, AID-01,) V

-----104338 101733Z /44

O 101315Z JUL 80
FM AMEMBASSY LILONGWE
TO SECSTATE WASHDC IMMEDIATE 4932

UNCLAS SECTION 1 OF 2 LILONGWE 1627

AIDAC

FOR AFR/SA AND AFR/DR/SAP

E.O. 12065: NA
SUBJECT: POLYTECHNIC 612-0202 MALAWI

REF: WRIN ANDERSON TELCOM JUNE 27

1. THE NEED FOR DEGREE TRAINED ENGINEERS EXCEEDS, BY FAR THE COMBINED SUPPLY OF INDIGENEOUS AND EXPATRIATE ENGINEERS.
2. IF FOR NO OTHER REASON, ENGINEERS SHOULD BE TRAINED FOR USE IN THE NATIONAL RURAL DEVELOPMENT PROGRAM (NRDP). THE NRDP IS A WELL DEFINED INTENSIVE DEVELOPMENT EXTENSION PROGRAM WITH THE TARGET OF PROVIDING ESSENTIAL GOODS AND SERVICES EQUITABLY TO RURAL MALAWIANS. IT IS A BOTTOM UP PLAN STARTING WITH A SERIES OF EXTENSION PLANNING AREAS (EPA'S). THREE TO FIVE CONTIGUOUS EPA'S COMPRISE AN AREA DEVELOPMENT DIVISION (ADD). ONE ADD IS REFERRED TO AS A RURAL DEVELOPMENT PROJECT WITHIN THE NATIONAL RURAL DEVELOPMENT PROGRAM.
3. THE NEED FOR MORE ENGINEERS TO SERVE JUST THE EPA'S IS PATENTLY EVIDENT. THERE HAVE BEEN COSTLY WORK SLOW DOWNS DUE TO THE ABSENCE OF ENGINEERING TALENT AT THE RIGHT TIME. FARM MACHINERY HAS BEEN DORMANT FOR INORDINATE TIME SPANS BECAUSE OF INABILITY TO ACQUIRE QUICK AND CORRECT REPAIR. IN SOME CASES, EXPENSIVE EQUIPMENT IS RUINED BY THE TINKERING APPROACH TO REPAIR. ROADS AND BRIDGES FLOODED IN THE MANGOCHI DISTRICT HAVE REMAINED UNDER WATER UNDUPLY AWAITING ENGINEERING ADVICE. IN SHORT, IF THERE WERE ADEQUATE NUMBERS OF SKILLED MALAWIAN ENGINEERS, THE IMPLEMENTATION OF PROJECTS UNDERTAKEN IN THE EPA'S AND ADD'S WOULD MOVE MORE QUICKLY; THE TRIAL AND ERROR REPAIR TIME FRAME WOULD LESSEN; GOVERNMENT PLANNING WOULD BOTH IMPROVE AND SPEED UP AND THERE WOULD BE REDUCED NEED FOR RELIANCE ON EXPATRIATE SERVICES WHICH ARE EXTREMELY COSTLY ECONOMICALLY AND POLITICALLY AND THEREFORE, SHOULD NOT BE PERPETUATED.
4. IN THE BROADER CONTEXT, A LARGE NUMBER OF EVERYDAY ITEMS- BICYCLES, LAMPS, RADIOS, PLOUGHS, ETC.- ALL OF WHICH COULD BE MANUFACTURED IN MALAWI ARE, IN THE MAIN, IMPORTED AT HIGH COST AND NEEDLESS LOSS OF FOREIGN EXCHANGE. MOST OF THE CONSTRUCTION COMPANIES ARE EXPATRIATE OWNED. THE TWO PRIMARY FOREIGN EXCHANGE EARNERS- TEA AND TOBACCO ESTATES- DEPEND ON EXPATRIATE TECHNICAL SKILLS FOR FARM MACHINE MANAGEMENT. THE ELECTRICITY SERVICE FOR THE ENTIRE COUNTRY DEPENDS HEAVILY UPON NON MALAWIAN ELECTRICAL ENGINEERS. FINALLY, APPROPRIATELY SKILLED ENGINEERS IN SUFFICIENT NUMBER, ARE FUNDAMENTAL TO MALAWI'S DEVELOPMENT TARGET OF GREATER SELF RELIANCE.

5. RESULTS OF THE 1971 SURVEY AND ANALYSIS OF REQUIREMENTS REVEALED THE FOLLOWING DATA ON ENGINEERS IN THE PUBLIC AND PRIVATE SECTORS:

TYPE ENGINEER	TOTAL	MALAWIANS
CIVIL	73	2
ELECTRICAL	13	0
MECHANICAL	44	2
CHEMICAL	1	0
QUANTITY SURVEYORS	13	0
SOIL MECHANICS	6	3

TECHNICIANS

CIVIL	145	87
ELECTRICAL	242	64
MECHANICAL	219	88
AERO	15	1
CHEMICAL	12	6
OTHER ENGINEERING TECH	13	3

TOTAL 796 226

6. OF THE TOTAL 796 ENGINEERS AND ENGINEERING TECHNICIANS (PUBLIC AND PRIVATE) AVAILABLE TO SERVE THE NEEDS OF A DEVELOPING POPULATION, APPROXIMATELY 20 PER CENT OR 226 ARE MALAWIANS. SUBTRACTING THE TECHNICIANS CATEGORY LEAVES 150 ENGINEERS OF WHICH APPROXIMATELY 4 PER CENT OR 7 ARE MALAWIAN. AS OF THE DATE OF PUBLICATION OF THE SURVEY, THERE WERE NO TELECOMMUNICATIONS OR MARINE ENGINEERS IN MALAWI OTHER THAN THOSE SUPPLIED FOR SPECIFIC ACTIVITIES. THERE WERE ALSO 232 VACANCIES.

7. SINCE THE DATE OF THE PUBLICATION, APPROXIMATELY 79 MALAWIANS HAVE ACQUIRED PROFESSIONAL DEGREES OVERSEAS IN ENGINEERING AS FOLLOWS:

CHEMICAL ENGINEERS	5
CIVIL ENGINEERS	28
ELECTRICAL/ELECTRONICS	25
MECHANICAL ENGINEERS	21
TOTAL	79

IN THE AGGREGATE THIS IS A GOOD ADDITION. IT DOES NOT, HOWEVER, MEET THE VACANCY NEED IDENTIFIED IN 1971. CONSIDERING THE RATE OF GROWTH IN DEVELOPMENT SINCE THE SURVEY, IT IS EASY TO EXTRAPOLATE AN EVEN LARGER CURRENT VACANCY RATE.

8. THE ABSENCE OF APPROPRIATE NUMBERS OF ENGINEERS IS A DRAG ON THE REAL EFFORT TO MEET DEVELOPMENT NEEDS. THE FOLLOWING EXAMPLES OF MAJOR DEVELOPMENT ACTIVITIES EACH REQUIRE ENGINEERING SKILL FOR SOME OR ALL OF ITS ASPECTS. THE ENGINEERS ARE NEEDED TO PROVIDE WATER SUPPLY; DESIGN AND SUPERVISE THE CONSTRUCTION OF ROADS, BRIDGES, AND IRRIGATION SCHEMES; AND MAINTAIN PLANTS, VEHICLES AND EQUIPMENT. IN THE EXAMPLES LISTED BELOW, THERE ARE SO FEW FULLY QUALIFIED INDIGENEOUS ENGINEERS ASSIGNED TO THE PROJECTS THAT NO RECORDS ARE KEPT. THE GOVERNMENT IS FORCED TO RELY UPON THE SERVICES OF THE ENGINEERS ASSIGNED TO THE MINISTRY OF WORKS OR BUY EXPATRIATE SKILLS. THE RESULT IS VERY THINLY SPREAD SERVICES. THE COST AND WAIT TIME FOR MINISTRY OF WORKS ENGINEERING SERVICES INCREASES THE COST OF IMPLEMENTATION IN ADDITION TO DIMINISHES EFFICIENCY.

9. EXAMPLES OF MAJOR ONGOING DEVELOPMENT ACTIVITIES REQUIRING PROFESSIONAL ENGINEERING SERVICES FOLLOWS:

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PAGE 02 OF 02 LILONG 01627 01 OF 02 101357Z M071 4954 A107035
AJ CENTRAL REGION LAKESHORE DEVELOPMENT: TOTAL
COST DOLS 21.8 MILLION

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LILONG 01627 02 OF 02 101409Z 022199 A106882

ACTION A10-35

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INFO AAAF-01 AFDR-06 PPCE-01 PPPB-02 PPEA-01 AADS-01 DSAG-02
DSRO-02 ENGR-02 CNE-01 AGRI-01 DT-01 RELO-01 HAST-01
AFDA-01 PDPF-01 /028 A4

INFO OCT-01 AF-10 EB-08 INR-10 INRE-00 CIAE-00 DODE-00
/064 V

-----102944 101420Z /42

O 101315Z JUL 80
FM AMEMBASSY LILONGWE
TO SECSTATE WASHDC IMMEDIATE 4933

UNCLAS SECTION 2 OF 2 LILONGWE 1627

AIDAC FOR AFR/SA AND AFR/DR/SAP

- B) LILONGWE LAND DEVELOPMENT PROGRAM, PHASE III:
TOTAL COST DOLS 13.0 MILLION;
- C) SHIRE VALLEY AGRICULTURAL DEVELOPMENT PROJECT
PHASE II: TOTAL COST DOLS 13.2 MILLION;
- D) KARONGA-CHITIPA RURAL DEVELOPMENT PROJECT, PHASE
II: TOTAL COST DOLS 13.3 MILLION;
- E) SMALLHOLDER TEA DEVELOPMENT: TOTAL COST DOLS
1.9 MILLION
- F) CROP STORAGE: TOTAL COST DOLS 533 THOUSAND;
- G) SEED TECHNOLOGY: TOTAL COST DOLS 403 THOUSAND;
- H) HOUSING FOR AGRICULTURAL EXTENSION STAFF: TOTAL
COSTS DOLS 1.8 MILLION;
- I) ANIMAL HUSBANDRY: TOTAL COST DOLS 1.3 MILLION;
- J) DEVELOPMENT OF DRY LAND AND IRRIGATED SETTLEMENT
SCHEMES: TOTAL COST DOLS 1.7 MILLION;
- K) FISHERIES DEVELOPMENT: TOTAL COST DOLS 5.8 MILLION;
- L) DEVELOPMENT OF TRADITIONAL HOUSING AREAS PARTS I
AND II: TOTAL COSTS DOLS 16.0 MILLION;
- M) TRANSPORTATION, MAJOR ROADS
BLANTYRE-CHIKWAWA ROAD, DOLS 7.5 MILLION
MARONGA-KACHECHE ROAD, DOLS 924 THOUSAND
KASUNGU-JENDI ROAD DOLS 10.9 MILLION;
- N) TRANSPORTATION, DISTRICT ROADS DOLS 12.4
MILLION;
- O) RURAL WATER AND SANITATION: TOTAL COST DOLS
35.8 MILLION.

SOURCE OF ABOVE INFORMATION QUOTE ESTIMATES OF
EXPENDITURE ON DEVELOPMENT ACCOUNT FOR THE FINANCIAL
YEAR 1979/80 AS LAID BEFORE PARLIAMENT MARCH 1979.
MALAWI GOVERNMENT PRINTING PRESS END QUOTE.

10. JOB OPPORTUNITIES UPON GRADUATION ARE AVAILABLE
THROUGH AT LEAST THE FOLLOWING GOVERNMENTAL UNITS,
PARASTATALS AND INDUSTRIAL CORPORATIONS:

- A) MINISTRY OF TRANSPORT AND COMMUNICATIONS
- B) MINISTRY OF WORKS AND SUPPLIES
- C) POSTS AND TELECOMMUNICATIONS DEPARTMENT
- D) MALAWI BOARD OF ENGINEERS
- E) AIR MALAWI
- F) ELECTRICITY SUPPLY COMMISSION
- G) MALAWI HOUSING CORPORATION
- H) MALAWI RAILWAYS
- I) BLANTYRE CITY COUNCIL-ENGINEERS DEPARTMENT
- J) BLANTYRE WATER BOARD
- K) COMMISSION ON LANDS WATER AND VALUATION
- L) MINISTRY OF AGRICULTURE AND NATURAL RESOURCES
- M) INDUSTRIAL TRAINING DIVISION, MINISTRY OF LABOR
- N) IMPERIAL GROUP LTD (TOBACCO PROCESSORS)
- O) LEVER BROTHERS LTD (SOAP MANUFACTURERS)
- P) UNITED TRANSPORT LTD
- Q) AGRICULTURAL DEVELOPMENT AND MARKETING CORPORATION

- R) BROWN AND CLAPPERTON GROUP (MANUFACTURERS OF
SMALL TOOLS AND MACHINERY)
 - S) COLD STORAGE COMPANY
 - T) W AND C FRENCH (CONSTRUCTION ENGINEERS)
 - U) HOWEARD HUMPHREYS AND SONS (CONSULTING CIVIL ENGINEERS)
11. INFORMATION ON ADDITIONAL FINANCING NEEDED TO
SUPPORT THE POLYTECHNIC EXPANSION FOLLOWS:

12. THE MALAWI GOVERNMENT DOCUMENT QUOTE APPROVED
ESTIMATES OF EXPENDITURE ON DEVELOPMENT ACCOUNT FOR
THE FINANCIAL YEARS 1979/80 AND 1980/81 END QUOTE
LISTS APPROVED ESTIMATES FOR THE POLYTECHNIC OF
DOLS AT:

79/80	80/81	81/82
\$819,000	\$1,451,871	\$1,719,514

NOTE: APPROVED ESTIMATES DO NOT GO BEYOND 2 YEARS

13. IN ADDITION TO THE APPROVED ESTIMATES, THE POLYTECHNIC
GENERATES INCOME OF ITS OWN IN A VARIETY OF WAYS.
FOR THE FINANCIAL YEAR 79/80, THE POLYTECHNIC EARNED
DOLS 212,149 EVEN THOUGH ITS ESTIMATED EARNINGS
FOR THE YEAR WERE DOLS 163,416. THE ESTIMATED SELF
GENERATED INCOME FOR 80/81 IS DOLS 211,303 AND
FOR 81/82 DOLS 229,378. THIS INCOME IS USED TO
EITHER REDUCE REQUESTS FOR APPROPRIATIONS FROM
GOVERNMENT OR TO PROCURE ITEMS NOT NORMALLY PROVIDED
FOR IN GOVERNMENT ALLOCATIONS. THE RECEIPT AND USE OF
SELF GENERATED INCOME IS CONTROLLED BY REGULATIONS.

14. IN PREPARATION FOR ESTIMATES OF FUTURE NEEDS
THE UNIVERSITY PREPARES ANNUALLY A PUBLICATION CALLED
QUOTE UNIVERSITY OF MALAWI DRAFT ESTIMATES END QUOTE.
DRAFT ESTIMATES FOR 1980/81/82/83 ARE CONTAINED IN
DOCUMENT NUMBER 14333. THIS DOCUMENT PROJECTS NEED
FOR THE FOLLOWING DURING THE SCHOOL YEAR 1980-1983
(EXCLUDING PERSONNEL PROVIDED THROUGH DONOR ASSISTANCE):
FOUR PROFESSORS; EIGHT READERS; TWENTY FOUR LECTURERS;
THREE ASSISTANT REGISTRARS; AND ONE ASSISTANT LIBRARIAN.
SOME OF THE LECTURERS ARE FOR THE ENGINEERING FACULTY.
THIS SCHEDULE OF ADDITIONAL RECURRENT COSTS CONCERNS ALL
INSTRUCTIONAL UNITS UNDER THE POLYTECHNIC'S MANDATE.
TOTAL FINANCIAL REQUIREMENTS FOR THE ADDITIONAL COSTS ARE:
80/81 DOLS 402,490; 81/82 DOLS 632,915; 82/83 DOLS 952,124.
THESE AMOUNTS ASSUME AN INCREASE IN STUDENTS OF
APPROXIMATELY 10 PERCENT PER ANNUM. COST FOR STAFF
EXPANSION ALONE IS 80/81 DOLS 59,381; 81/82 DOLS
102,985; 82/83 DOLS 182,571. DIFFERENCE BETWEEN
TOTAL COSTS AND STAFF COSTS IS ATTRIBUTED TO
STUDENT LIVING, AN EXPRESSION USED TO COVER ALL
COSTS ATTRIBUTABLE TO STUDENTS WHO ATTEND THE
COLLEGE OR SCHOOL. IN THIS PARTICULAR CASE, STUDENT
LIVING INCLUDES COST OF DORMITORIES INTERNALIA FOR
STUDENTS OTHER THAN ENGINEERING STUDENTS. NOTE:
POLYTECHNIC DOES NOT NOW HAVE SUFFICIENT DORMITORY
SPACE FOR ALL ENROLLED.

15. ADDITIONALLY REQUESTED INFORMATION WILL FOLLOW
SEPTEL.
HORAN

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ACTION AID-59

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ACTION OFFICE AFSA-03
INFO AAF-01 AFR-06 PPC-01 PPP-02 PPEA-01 AADS-01 DSAG-02
OSRD-02 ENGR-02 CHG-01 AGRI-01 DT-01 RELO-01 MAST-01
AFDA-01 PDR-01 /828 A4

INFO OCT-01 AF-10 EB-08 INR-10 INRE-00 CIAF-00 DODE-00
/888 W

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O 10135Z JUL 80
FM AMEMBASSY LILONGWE
TO SECSTATE WASHDC IMMEDIATE 4932

UNCLAS SECTION 1 OF 2 LILONGWE 1627

AIDAC

FOR AFR/SA AND AFR/DR/SAP

E. O. 12865: NA
SUBJECT: POLYTECHNIC 612-0282 MALAWI

REF: WRIN ANDERSON TELCOM JUNE 27

1. THE NEED FOR DEGREE TRAINED ENGINEERS EXCEEDS, BY FAR THE COMBINED SUPPLY OF INDIGENEOUS AND EXPATRIATE ENGINEERS.
2. IF FOR NO OTHER REASON, ENGINEERS SHOULD BE TRAINED FOR USE IN THE NATIONAL RURAL DEVELOPMENT PROGRAM (NRDP). THE NRDP IS A WELL DEFINED INTENSIVE DEVELOPMENT EXTENSION PROGRAM WITH THE TARGET OF PROVIDING ESSENTIAL GOODS AND SERVICES EQUITABLY TO RURAL MALAWIANS. IT IS A BOTTOM UP PLAN STARTING WITH A SERIES OF EXTENSION PLANNING AREAS (EPA'S). THREE TO FIVE CONTIGUOUS EPA'S COMPRISE AN AREA DEVELOPMENT DIVISION (ADD). ONE ADD IS REFERRED TO AS A RURAL DEVELOPMENT PROJECT WITHIN THE NATIONAL RURAL DEVELOPMENT PROGRAM.
3. THE NEED FOR MORE ENGINEERS TO SERVE JUST THE EPA'S IS PATEHTLY EVIDENT. THERE HAVE BEEN COSTLY WORK SLOW DOWNS DUE TO THE ABSENCE OF ENGINEERING TALENT AT THE RIGHT TIME. FARM MACHINERY HAS BEEN DORMANT FOR INORDINATE TIME PERIODS BECAUSE OF INABILITY TO ACQUIRE QUICK AND CORRECT REPAIR. IN SOME CASES, EXPENSIVE EQUIPMENT IS RUINED BY THE TINKERING APPROACH TO REPAIR. ROADS AND BRIDGES FLOODED IN THE MANGOCHI DISTRICT HAVE REMAINED UNDER WATER UNDULY AWAITING ENGINEERING ADVICE. IN SHORT, IF THERE WERE ADEQUATE NUMBERS OF SKILLED MALAWIAN ENGINEERS, THE IMPLEMENTATION OF PROJECTS UNDERTAKEN IN THE EPA'S AND ADD'S WOULD MOVE MORE QUICKLY; THE TRIAL AND ERROR REPAIR TIME FRAME WOULD LESSEN; GOVERNMENT PLANNING WOULD BOTH IMPROVE AND SPEED UP AND THERE WOULD BE REDUCED NEED FOR RELIANCE ON EXPATRIATE SERVICES WHICH ARE EXTREMELY COSTLY ECONOMICALLY AND POLITICALLY AND THEREFORE, SHOULD NOT BE PERPETUATED.
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ENGINEERS. FINALLY, APPROPRIATELY SKILLED ENGINEERS IN SUFFICIENT NUMBER, ARE FUNDAMENTAL TO MALAWI'S DEVELOPMENT TARGET OF GREATER SELF RELIANCE.

5. RESULTS OF THE 1971 SURVEY AND ANALYSIS OF REQUIREMENTS REVEALED THE FOLLOWING DATA ON ENGINEERS IN THE PUBLIC AND PRIVATE SECTORS:

TYPE ENGINEER	TOTAL	MALAWIANS
CIVIL	73	2
ELECTRICAL	13	0
MECHANICAL	44	2
CHEMICAL	1	0
QUANTITY SURVEYORS	13	0
SOIL MECHANICS	6	3

TECHNICIANS		
CIVIL	145	87
ELECTRICAL	242	64
MECHANICAL	219	58
AERO	15	1
CHEMICAL	12	6
OTHER ENGINEERING TECH	13	

TOTAL 796 226

6. OF THE TOTAL 796 ENGINEERS AND ENGINEERING TECHNICIANS (PUBLIC AND PRIVATE) AVAILABLE TO SERVE THE NEEDS OF A DEVELOPING POPULATION, APPROXIMATELY 28 PER CENT OR 226 ARE MALAWIANS. SUBTRACTING THE TECHNICIANS CATEGORY LEAVES 150 ENGINEERS OF WHICH APPROXIMATELY 4 PER CENT OR 7 ARE MALAWIAN. AS OF THE DATE OF PUBLICATION OF THE SURVEY, THERE WERE NO TELECOMMUNICATIONS OR MARINE ENGINEERS IN MALAWI OTHER THAN THOSE SUPPLIED FOR SPECIFIC ACTIVITIES. THERE WERE ALSO 232 VACANCIES.

7. SINCE THE DATE OF THE PUBLICATION, APPROXIMATELY 79 MALAWIANS HAVE ACQUIRED PROFESSIONAL DEGREES OVERSEAS IN ENGINEERING AS FOLLOWS:

CHEMICAL ENGINEERS	5
CIVIL ENGINEERS	28
ELECTRICAL/ELECTRONICS	25
MECHANICAL ENGINEERS	21
TOTAL	79

IN THE AGGREGATE THIS IS A GOOD ADDITION. IT DOES NOT, HOWEVER, MEET THE VACANCY NEED IDENTIFIED IN 1971. CONSIDERING THE RATE OF GROWTH IN DEVELOPMENT SINCE THE SURVEY, IT IS EASY TO EXTRAPOLATE AN EVEN LARGER CURRENT VACANCY RATE.

8. THE ABSENCE OF APPROPRIATE NUMBERS OF ENGINEERS IS A DRAG ON THE REAL EFFORT TO MEET DEVELOPMENT NEEDS. THE FOLLOWING EXAMPLES OF MAJOR DEVELOPMENT ACTIVITIES EACH REQUIRE ENGINEERING SKILL FOR SOME OR ALL OF ITS ASPECTS. THE ENGINEERS ARE NEEDED TO PROVIDE WATER SUPPLY; DESIGN AND SUPERVISE THE CONSTRUCTION OF ROADS, BRIDGES, AND IRRIGATION SCHEMES; AND MAINTAIN PLANTS, VEHICLES AND EQUIPMENT. IN THE EXAMPLES LISTED BELOW, THERE ARE SO FEW FULLY QUALIFIED INDIGENEOUS ENGINEERS ASSIGNED TO THE PROJECTS THAT NO RECORDS ARE KEPT. THE GOVERNMENT IS FORCED TO RELY UPON THE SERVICES OF THE ENGINEERS ASSIGNED TO THE MINISTRY OF WORKS OR BUY EXPATRIATE SKILLS. THE RESULT IS VERY THINLY SPREAD SERVICES. THE COST IN WAIT TIME FOR MINISTRY OF WORKS ENGINEERING SERVICES INCREASES THE COST OF IMPLEMENTATION IN ADDITION TO DIMINISHES EFFICIENCY.

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9 EXAMPLES OF MAJOR ONGOING DEVELOPMENT ACTIVITIES
REQUIRING PROFESSIONAL ENGINEERING SERVICES FOLLOW:

022197 AID6874

A) CENTRAL REGION LAKESHORE DEVELOPMENT: TOTAL
COST DOLS 21.8 MILLION

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ACTION OFFICE AFSA-03
INFO AAAF-01 AFOR-06 PPCE-01 PPPB-02 PPEA-01 AADS-01 DSAG-02
DSRO-02 ENGR-02 CHB-01 AGRI-01 DT-01 RELO-01 MAST-01
AFOA-01 PDPR-01 /028 A4

INFO DCT-01 AF-10 EB-00 INR-10 INRE-00 CIAE-00 DODE-00
/864 W

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O 101315Z JUL 80
FM AMEMBASSY LILONGWE
TO SECSTATE WASHDC IMMEDIATE 495.

UNCLAS SECTION 2 OF 2 LILONGWE 1627

AIDAC FOR AFR/SA AND AFR/DR/SAP

B) LILONGWE LAND DEVELOPMENT PROGRAM, PHASE III:
TTAL COST DOLS 13.8 MILLION;
C) SHIRE VALLEY AGRICULTURAL DEVELOPMENT PROJECT
PHASE II: TOTAL COST DOLS 13.2 MILLION;
D) KARONGA-CHITIPA RURAL DEVELOPMENT PROJECT, PHASE
II: TOTAL COST DOLS 13.3 MILLION;
E) SMALLHOLDER TEA DEVELOPMENT: TOTAL COST DOLS
1.9 MILLION
F) CROP STORAGE: TOTAL COST DOLS 333THOUSAND;
G) SEED TECHNOLOGY: TOTAL COST DOLS 403 THOUSAND;
H) HOUSING FOR AGRICULTURAL EXTENSION STAFF: TOTAL
COSTS DOLS 1.8 MILLION;
I) ANIMAL HUSBANDRY: TOTAL COST DOLS 1.3 MILLION;
J) DEVELOPMENT OF DRY LAND AND IRRIGATED SETTLEMENT
SCHEMES: TOTAL COST DOLS 1.7 MILLION;
K) FISHERIES DEVELOPMENT: TOTAL COST DOLS 5.8 MILLION;
L) DEVELOPMENT OF TRADITIONAL HOUSING AREAS PARTS I
AND II: TOTAL COSTS DOLS 16.0 MILLION;
M) TRANSPORTATION, MAJOR ROADS
BLANTYRE-CHIKWAWA ROAD, DOLS 7.5 MILLION
KARONGA-KACHECHE ROAD, DOLS 924 THOUSAND
KASUNGU-JEHOI ROAD DOLS 10.9 MILLION;
N) TRANSPORTATION, DISTRICT ROADS DOLS 12.4
MILLION;
O) RURAL WATER AND SANITATION: TOTAL COST DOLS
35.8 MILLION.

SOURCE OF ABOVE INFORMATION QUOTE ESTIMATES OF
EXPENDITURE ON DEVELOPMENT ACCOUNT FOR THE FINANCIAL
YEAR 1979/80 AS LAID BEFORE PARLIAMENT MARCH 1979.
MALAWI GOVERNMENT PRINTING PRESS END QUOTE.

10. JOB OPPORTUNITIES UPON GRADUATION ARE AVAILABLE
THROUGH AT LEAST THE FOLLOWING GOVERNMENTAL UNITS,
PARASTATALS AND INDUSTRIAL CORPORATIONS:
A) MINISTRY OF TRANSPORT AND COMMUNICATIONS
B) MINISTRY OF WORKS AND SUPPLIES
C) POSTS AND TELECOMMUNICATIONS DEPARTMENT
D) MALAWI BOARD OF ENGINEERS
E) AIR MALAWI
F) ELECTRICITY SUPPLY COMMISSION
G) MALAWI HOUSING CORPORATION
H) MALAWI RAILWAYS
I) BLANTYRE CITY COUNCIL-ENGINEERS DEPARTMENT
J) BLANTYRE WATER BOARD
K) COMMISSION ON LANDS WATER AND VALUATION
L) MINISTRY OF AGRICULTURE AND NATURAL RESOURCES
M) INDUSTRIAL TRAINING DIVISION, MINISTRY OF LABOR
N) IMPERIAL GROUP LTD (TOBACCO PROCESSORS)
O) LEVER BROTHERS LTD SOAP MANUFACTURERS)
P) UNITED TRANSPORT LTD
Q) AGRICULTURAL DEVELOPMENT AND MARKETING CORPORATION

R) BROWN AND CLAPPERTON GROUP (MANUFACTURERS OF
SMALL TOOLS AND MACHINERY)
S) COLD STORAGE COMPANY
T) W AND C FREICH (CONSTRUCTION ENGINEERS)
U) HOWARD HUMPHREYS AND SONS (CONSULTING CIVIL ENGINEERS)
11. INFORMATION ON ADDITIONAL FINANCING NEEDED TO
SUPPORT THE POLYTECHNIC EXPANSION FOLLOWS:

12. THE MALAWI GOVERNMENT DOCUMENT QUOTE APPROVED
ESTIMATES OF EXPENDITURE ON DEVELOPMENT ACCOUNT FOR
THE FINANCIAL YEARS 1979/80 AND 1980/81 END QUOTE
LISTS APPROVED ESTIMATES FOR THE POLYTECHNIC OF
DOLS AT:

79/80	80/81	81/82
\$819,000	\$1,451,871	\$1,719,314

NOTE: APPROVED ESTIMATES DO NOT GO BEYOND 2 YEARS

13. IN ADDITION TO THE APPROVED ESTIMATES, THE POLYTECHNIC
GENERATES INCOME OF ITS OWN IN A VARIETY OF WAYS.
FOR THE FINANCIAL YEAR 79/80, THE POLYTECHNIC EARNED
DOLS 212,149 EVEN THOUGH ITS ESTIMATED EARNINGS
FOR THE YEAR WERE DOLS 163,416. THE ESTIMATED SELF
GENERATED INCOME FOR 80/81 IS DOLS 211,303 AND
FOR 81/82 DOLS 229,378. THIS INCOME IS USED TO
EITHER REDUCE REQUESTS FOR APPROPRIATIONS FROM
GOVERNMENT OR TO PROCURE ITEMS NOT NORMALLY PROVIDED
FOR IN GOVERNMENT ALLOCATIONS. THE RECEIPT AND USE OF
SELF GENERATED INCOME IS CONTROLLED BY REGULATIONS.

14. IN PREPARATION FOR ESTIMATES OF FUTURE NEEDS
THE UNIVERSITY PREPARES ANNUALLY A PUBLICATION CALLED
QUOTE UNIVERSITY OF MALAWI DRAFT ESTIMATES END QUOTE.
DRAFT ESTIMATES FOR 1980/81/82/83 ARE CONTAINED IN
DOCUMENT NUMBER 14333. THIS DOCUMENT PROJECTS NEED
FOR THE FOLLOWING DURING THE SCHOOL YEAR 1980-1983
(EXCLUDING PERSONNEL PROVIDED THROUGH DONOR ASSISTANCE):
FOUR PROFESSORS; EIGHT READERS; TWENTY FOUR LECTURERS;
THREE ASSISTANT REGISTRARS; AND ONE ASSISTANT LIBRARIAN.
SOME OF THE LECTURERS ARE FOR THE ENGINEERING FACULTY.
THIS SCHEDULE OF ADDITIONAL RECURRENT COSTS CONCERNS ALL
INSTRUCTIONAL UNITS UNDER THE POLYTECHNIC'S MANDATE.
TOTAL FINANCIAL REQUIREMENTS FOR THE ADDITIONAL COSTS ARE:
80/81 DOLS 402,490; 81/82 DOLS 632,915; 82/83 DOLS 952,124.
THESE AMOUNTS ASSUME AN INCREASE IN STUDENTS OF
APPROXIMATELY 10 PERCENT PER ANNUM. COST FOR STAFF
EXPANSION ALONE IS 80/81 DOLS 59,381; 81/82 DOLS
102,985; 82/83 DOLS 182,571. DIFFERENCE BETWEEN
TOTAL COSTS AND STAFF COSTS IS ATTRIBUTED TO
STUDENT LIVING, AN EXPRESSION USED TO COVER ALL
COSTS ATTRIBUTABLE TO STUDENTS WHO ATTEND THE
COLLEGE OR SCHOOL. IN THIS PARTICULAR CASE, STUDENT
LIVING INCLUDES COST OF DORMITORIES; MATERIALS FOR
STUDENTS OTHER THAN ENGINEERING STUDENTS. NOTE:
POLYTECHNIC DOES NOT NOW HAVE SUFFICIENT DORMITORY
SPACE FOR ALL ENROLLED.
15. ADDITIONALLY REQUESTED INFORMATION WILL FOLLOW
SEPTEL.
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INFO AAF-01 AFDR-06 PPCE-01 PPPB-02 PPEA-01 RELO-01 MAST-01
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TO SECSTATE WASHDC IMMEDIATE 4941

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AIDAC FOR AFR/SA AND AFR/DR/SAP

E.O. 12865: N/A

SUBJ: POLYTECHNIC, 612-0201, MALAWI

REF: (A) WRIN ANDERSON TELECOM JUNE 27, (B) LILONGWE 1627

1. FURTHER TO REF B, THIS CABLE PROVIDES INFORMATION ON
(A) OTHER DONOR COORDINATION; (B) MONITORING IMPLEMENTATION
AND PROCUREMENT; AND (C) ESTIMATED COST OF TRAINING OVERSEAS.

2. OTHER DONOR COORDINATION: AS IS THE CASE WITH ALL
DEVELOPMENT ACTIVITIES IN MALAWI, DONOR COORDINATION IS
GIVEN AS MUCH CONSIDERATION AS IS THE IMPLEMENTATION OF THE
ACTIVITY ITSELF. IN THE INSTANCE OF THE POLYTECHNIC, THERE
IS A FOUR MAN COORDINATING TEAM HEADED BY THE VICE CHANCELLOR,
DR. DAVID KIMBLE. DR. KIMBLE HAS THE PRIMARY RESPONSIBILITY.
THE REMAINING THREE, LISTED NOT NECESSARILY IN HIERARCHICAL
ORDER, INCLUDE ROBERT A. MBAYA, UNIVERSITY REGISTRAR;
D. BRIAN ROY, ARCHITECT, ESTATES DEVELOPMENT OFFICER; AND
A.V. KAMBALAMETORE, PRINCIPAL, POLYTECHNIC.

3. IN ADDITION TO THE PRIMARY UNIT IDENTIFIED ABOVE
WITHIN THE OFFICE OF THE PRESIDENT CABINET, THE
ECONOMIC PLANNING DIVISION PROVIDES THE OVERSIGHT OF
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DONOR COORDINATION. THE SPECIFIC UNIT IN THE ECONOMIC
PLANNING DIVISION, ASSIGNED TO ASSIST THE
POLYTECHNIC PROJECT, IS KNOWN OFFICIALLY AS THE MAN-
POWER ASSESSMENT UNIT. IT OVERSEAS DONOR ACTIONS AND
CONTRIBUTIONS TO MANPOWER DEVELOPMENT AT THE NATIONAL
LEVEL.

4. ALL ASPECTS OF PROPOSED DONOR CONTRIBUTIONS TO THE
POLYTECHNIC FROM U.K., ADF, EEC, AND AID, HAVE BEEN
REVIEWED AND ORCHESTRATED BY THE MANPOWER UNIT OF THE
OFFICE OF THE PRESIDENT AND THE UNIVERSITY TEAM,
SINGULARLY AND COLLECTIVELY. ON-THE-GROUND COORDINATION
WILL BE PRINCIPALLY THE RESPONSIBILITY OF THE FOUR
MAN UNIVERSITY OF MALAWI TEAM COMPOSED OF THE VICE
CHANCELLOR, THE REGISTRAR, THE ESTATES DEVELOPMENT
OFFICER AND THE PRINCIPAL.

5. MONITORING IMPLEMENTATION AND PROCUREMENT: THE
CONSTRUCTION COMPONENT WILL BE MONITORED BY BRIAN ROY
WITH SUPPORT FROM REDSO ENGINEERS. ROY'S OFFICIAL
DUTIES AT THE UNIVERSITY INCLUDE ADMINISTERING AND
SUPERVISING ALL UNIVERSITY CONSTRUCTION. HE IS AN
ARCHITECT WITH CONSIDERABLE EXPERIENCE IN THE UK AND
OTHER COUNTRIES ABROAD. IN ADDITION, THE UNIVERSITY
OF MALAWI EMPLOYS THE SERVICES OF NORMAN AND EARGORN
QUANTITY SURVEYORS AS INDEPENDENT CERTIFYING CONSTRUCTION
ENGINEERS AND ARCHITECTS.

6. THE A.I.D. OFFICE WILL REQUEST ASSISTANCE FROM REDSO
PROCUREMENT SPECIALIST BEFORE THE FIRST DISBURSEMENT OF
FUNDS FOR PROCUREMENT OF COMMODITIES. THE PROCUREMENT
SPECIALIST WILL ASSIST THE PROCUREMENT UNIT OF THE

UNIVERSITY TO SET UP PROCEDURES IN ACCORDANCE WITH AID
REGULATIONS. THE A.I.D. MANAGEMENT OFFICER WILL MONITOR
ACTUAL PROCUREMENT.

7. ESTIMATED COST OF OVERSEAS TRAINING: THE MAJOR
SPONSORS OF OVERSEAS TRAINING ARE THE U.K., THE EEC AND
THE UN FAMILY OF AGENCIES. FOR FY80, UK COSTS ARE
APPROXIMATELY U.S. DOLS 14,040 PER ACADEMIC YEAR.
CURRENTLY, THE U.K. SUBSIDIZES THE TUITION OF OVERSEAS
STUDENTS OF COMMONWEALTH NATIONS. THIS SUBSIDY IS
LIKELY TO BE REMOVED IN THE NEAR FUTURE WHICH WILL
REQUIRE PAYING THE FULL TUITION PRICE OF THE EDUCATION.
IF THIS OCCURS, TUITION FEES FOR A U.K. ACADEMIC YEAR
WOULD BE INCREASED BY 50 PERCENT (NOT INCLUDING INFLATION).
NOTE: THE 50 PERCENT INCREASE IS FOR TUITION ONLY. DOES NOT
INCLUDE SUBSISTENCE AND OTHER FEES.

8. THE U.N.D.P. CURRENT YEAR COST PER STUDENT IS US
DOLS 10,100. THE UN ESTIMATES THE 1981 COST TO BE
US DOLS 19,300, AND COST PER STUDENT FOR 1982 WOULD BE
USDOLS 20,500 PER ACADEMIC YEAR.

9. THE EEC COST PER ACADEMIC YEAR IS APPROXIMATELY
US DOLS 17,000. IT IS EXPECTED THAT COSTS WILL INFLATE
IN 1981 AND 1982. THE ACTUAL RATE OF INFLATION IS
DIFFICULT TO ARRIVE AT BECAUSE SOME OF THE EEC TRAINING
IS SUBSIDIZED AS IS THE TRAINING FUNDED BY U.K.
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DRAFTED BY AID/AFR/DR/ENG: GHOOVER: RCJ

APPROVED BY AID/AFR/DR: JNKOEHRING

AID/AFR/DR/SA: WVOLFF

AID/AFR/DR: NCOMEN

AID/AFR/DR/SA: APATRICK

AID/AFR/SA: RWRIN (DRAFT)

AID/AFR/ENG: FZOBRIST (DRAFT)

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*RIDAC FOR REDSO/EA ENGINEER

E.O. 12065: N/A

TAGS:

SUBJECT: MALAWI POLYTECHNIC (512-0201); PROPOSED CBD
NOTICE FOR A & E PREQUALIFICATION

1. AFR/DR IS FINALIZING THE PREPARATION OF SUBJECT PP
AND IS AIMING FOR MID-JUNE PROJECT REVIEW MEETING. WE
FEEL THAT IN AN EFFORT TO SAVE TIME AND TO EXPEDITE
THE PROJECT, A NOTICE IN THE CBD, AS WELL AS IN OTHER
LOCAL AND AREA PUBLICATIONS IN AFRICA, FOR PRE-
QUALIFICATION OF A & E FIRMS SHOULD BE PUBLISHED ASAP.
IN THE EVENT THAT REDSO/EA IS NOT ABLE TO PREPARE THE
CBD NOTICE, WE ARE WILLING TO ASSIST AND PREPARE IT
HERE. SHOULD THAT BE THE CASE, AND IN THE INTEREST
OF COORDINATION OF PUBLICATIONS IN AFRICA AND IN THE
U.S., YOU SHOULD NOTE THAT IT NORMALLY TAKES ABOUT
TWO WEEKS FROM THE DATE IN WHICH WE SEND THE NOTICE
TO THE APPEARANCE OF THE NOTICE IN THE CBD.

2. ADDITIONALLY WE WOULD NEED CLARIFICATION OF THE
FOLLOWING MATTERS:

A. WHAT ARE THE FUNCTIONS AND RESPONSIBILITIES
OF THE QUANTIT/ SURVEYOR (HANSCOME AND PARTNERS)?
DO THEY PREPARE THE GOVERNMENT COST ESTIMATE? DO THEY
COORDINATE WITH THE A & E AND IF SO, TO WHAT EXTENT
AND AT WHAT STAGES?

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B. WE ASSUME THAT AID QUESTIONNAIRES 254 AND 255
FOR PREQUALIFICATION WILL BE USED. PLEASE ADVISE IF
ANY DEPARTURE FROM THIS PROCEDURE IS RECOMMENDED.

C. WHO WILL EVALUATE THE PREQUALIFICATION QUEST-
IONNAIRES WHEN SUBMITTED? TO WHOM ARE THEY TO BE
ADDRESSED? HOW MANY COPIES?

D. ASSUMING COM/MIN. WORKS CONTRACTING PROCEDURES
AND CRITERIA FOR EVALUATING QUESTIONNAIRES WILL BE
USED, HOW AND WHEN WILL AID PRIOR APPROVAL (S) BE
MADE?

E. WHAT IS THE ESTIMATED TIME REQUIRED FOR THE
SELECTED A & E TO PREPARE BID PACKAGE, DRAWINGS,
ETC.?

F. HOW MANY CALENDAR DAYS SHOULD BE GIVEN
PROSPECTIVE FIRMS TO PREPARE AND TRANSMIT THEIR
A & E QUESTIONNAIRES? (THIS SHOULD BE COORDINATED
IN VARIOUS ADVERTISING MEDIA TO AVOID CONFLICT OF
CLOSING DATES).

G. WHAT SPECIAL REQUIREMENTS THAT THE SCIENCE
BUILDING MIGHT REQUIRE IN TERMS OF DESIGN LOADINGS
OR SPECIAL ELECTRICAL CONNECTIONS.

H. WHAT TYPE OF A CONTRACT IS TO BE ENTERED INTO
WITH THE SELECTED A & E? ANSWERS TO THE ABOVE
QUESTIONS WILL FACILITATE THE PREPARATION OF THE
TEXT OF THE PROPOSED CBD NOTICE. MUSKIE

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AIDAC FOR AFR/SA AND AFR/DR

E.O. 12958: N/A

SUBJ: POLYTECHNIC, PROJECT 012-0201 MALAWI

REF: (A) STATE 304998 (B) 293325 (C) MBABANE 237A

1. STATEMENT ON THE RELATIONSHIP BETWEEN TRAINING ENGINEERS AND MALAWI'S DEVELOPMENT (REF CABLE C) FOLLOWS.
2. BEGIN TEXT: MALAWI'S ECONOMIC CIRCUMSTANCES RULE OUT THE PROMOTION OF HIGHLY CAPITAL INTENSIVE UNDERTAKINGS UNLESS THEIR FUNCTION IS CLEARLY ESSENTIAL AND THERE IS NO CHOICE OF TECHNOLOGY, A MAJOR PART OF DEVELOPMENT, THEREFORE, IS TO BE ACHIEVED BY MEANS WHICH MAKE INTENSIVE USE OF THE ABUNDANT LABOR SUPPLY. THIS LABOR SUPPLY, TO BE USEFUL MAXIMALLY, MUST BE APPROPRIATELY SKILLED
3. TO PURSE DEVELOPMENT EFFICIENTLY, TAKE ENTIRE RANGE OF ENGINEERING SKILLS IS REQUIRED. MALAWI NOW PRODUCES NEITHER SUFFICIENT NUMBERS OF ENGINEERS NOR A SUFFICIENT RANGE OF ENGINEERING SKILLS; CONSEQUENTLY, THERE ARE ELEMENTS OF DEVELOPMENT IN MALAWI WHICH ARE PROCEEDING AT A SLOWER RATE THAN DESIRED BECAUSE OF ABSENCE OF EASY ACCESS TO THE TECHNOLOGIES FOR WHICH ENGINEERS ARE TRAINED. THE SEVERE SHORTAGE OF AGRONOMIC ENGINEERS, ELECTRICAL, MECHANICA AND STRUCTURAL ENGINEERS, HYDROLOGISTS AND SURVEYORS, HAS HAD MORE DETRIMENTAL EFFECT ON THE SMALLHOLDER FARM SYSTEM IN MALAWI THAN TO THE ESTATE FARMING SYSTEM BECAUSE THE ESTATE FARMER HAS THE RESOURCES TO PAY THE HIGH CAPITAL COST OF PURCHASING EXPATRIATE SKILLS WHEN NEEDED, WHILE THE SMALLHOLDER MUST DEPEND ON GOVERNMENT RESOURCES TO SUPPLY SERVICES.
4. THE SLOW RATE OF SHIFT TO IMPORT SUBSTITUTIONS OR LOCAL PRODUCTION OF CONSUMER GOODS IS CORRELATED TO SHORTAGE OF PROFESSIONAL ENGINEERS AND ANCILLARY TECHNICIANS. PRICES OF SOME ORDINARY CONSUMER GOODS ARE HIGH AND ARE OFTEN IN SHORT SUPPLY. THE HIGH PRICE AND SHORT SUPPLY RESTRICT THE PURCHASING ABILITY OF THE URBAN AND RURAL POOR.
5. THE LACK OF QUALIFIED ENGINEERS IS PARTIALLY RESPONSIBLE FOR INCREASE IN DEVELOPMENT COSTS. POOR DESIGN; UNSATISFACTORY STRUCTURAL STANDARDS; PREMATURE WRITE-OFF OF EQUIPMENT DUE TO INADEQUATE MAINTENANCE; THE INABILITY TO MAKE REPAIRS IN UNUSUAL CIRCUMSTANCES; -S .873 91 31782.3,5 :-78,8 3/:38;3 743-(-63 :9,3487758 CONSIDERABLY TO THE TOTAL COST OF THE DEVELOPMENT OUTPUT.
6. ALTHOUGH VERY COGNIZANT OF THE NEED TO CONSERVE LAND, PREVENT DESERTIFICATION, AND REDUCE DEPENDENCE ON IMPORTED ENERGY, MALAWI HAS FEW ENGINEERS IN THESE SPECIALIZED AREAS. IN ADDITION, PRECISE QUANTITATIVE AND QUALITATIVE INFORMATION ON INDUSTRIAL MINERALS SUCH AS COAL, PHOSPHATE FOR FERTILIZER MANUFACTURE, AND RAW MATERIALS FOR CEMENT, GLASS AND CERAMIC IS NOT AVAILABLE BECAUSE OF GROSS SHORTAGE OF SKILLS, INCLUDING ENGINEERING, TO CONDUCT FIELD INVESTIGATIONS. GEOLOGICAL FINDS IN COMMERCIAL QUANTITIES WOULD NOT ONLY RELIEVE SOME OF THE EXISTING PRESSURE ON ARABLE LANDS BUT ALSO WOULD CREATE EMPLOYMENT FOR RURAL RESIDENTS, WOULD RESULT IN SAVINGS IN FOREIGN EXCHANGE, WOULD INCREASE REVENUE AND, DEPENDING ON THE FIND, MAY HAVE POSITIVE IMPACT ON ENERGY NEEDS.
7. SINCE 88 PERCENT OF MALAWI'S POPULATION RESIDES IN RURAL AREAS, MOST OF THE DEVELOPMENT ACTIVITIES ARE CENTERED THERE TOO. THE NATION'S DEVELOPMENT STRATEGY AIMS TO PROVIDE ADEQUATE FOOD, CLOTHING, HOUSING, SCHOOLS, HEALTH CARE, AND CLEAN WATER TO

ITS ENTIRE POPULATION AT A REASONABLE RATE OF ACHIEVEMENT. WITHOUT ENGINEERS IN SUFFICIENT NUMBER, POSSESSING THE FULL RANGE OF ENGINEERING SKILLS, ACHIEVEMENT OF THIS GOAL WILL BE RETARDED CONSIDERABLY. END TEXT.

8. COMMENT: REALIZE STATEMENT ABOVE MAY NOT EXPLICITLY ANSWER QUESTIONS C AND D, REFERENCE C, BUT BELIEVE THE QUESTIONS AS ASKED CANNOT BE ANSWERED IN THE ISOLATED FASHION IN WHICH THE QUESTIONS ARE FRAMED.

TOO MANY OTHER VARIABLES IMPACT ON THE RATE AT WHICH WORK HAS BEEN ACCOMPLISHED WITH OR WITHOUT ENGINEERS SUCH AS AVAILABILITY FUNDS, WEATHER CONDITIONS, MOVEMENT OR SHORTAGES OF SUPPLIES AND EQUIPMENT, ETC. TO ANSWER QUESTION D REQUIRES SO MANY ASSUMPTIONS THAT ANY QUANTITATIVE RESPONSE WOULD OR SHOULD BE SUSPECT. WE FULLY APPRECIATE THE INTENT OF QUESTIONS C AND D BUT BELIEVE THEY OVERREACH IN THE EFFORT TO GET AT MEASURABLE SPECIFICITY.

9. WE PROPOSE THIS PROJECT WITH THE UNDERSTANDING THAT QUANTITY AND QUALITY OF MANPOWER SKILLS ARE AMONG THE ESSENTIAL PRECONDITIONS OF DEVELOPMENT GROWTH. MALAWI HAS THE QUANTITY. THE PROJECT'S AIM IS TO IMPROVE THE QUALITY SO THAT, ALL OTHER INPUTS AND CONDITIONS BEING COMPARABLE, THERE CAN BE AN INCREASED RATE OF DEVELOPMENT ACCOMPLISHMENTS WHICH ONE DAY MAY BE EVEN MEASURABLE AS REQUESTED REF C, QUESTIONS C AND D.

10. WE WOULD PREFER TO ANSWER THE QUESTIONS IN REFERENCE B AFTER RECEIPT OF THE DRAFT PP IN WHATEVER STATE IT IS NOW. THE POLYTECHNIC DESIGN TEAM DEPARTED MALAWI WITHOUT LEAVING A DRAFT COPY FOR OFFICE USE. REQUEST, THEREFORE, THAT AID/M FORWARD COPY OF DRAFT TO LILONGWE. SUGGEST SOMEONE MANCOARRY TO EVALUATION CONFERENCE IN NAIROBI IT IS UNCOMFORTABLE TO ASK QUESTIONS OF OTHER COUNTRIES AND THE GOV WITHOUT THE ABILITY TO OFFER INFORMATION CONCERNING U.S. INTENT.

11. BRIAN ROY, ESTATES DEVELOPMENT OFFICER, INTENDS TO CONVENE MEETING OF ALL POLYTECHNIC DONORS TO iron out the QUESTIONS RAISED PARA 2 REF B. HIS VISION IS TO ORGANIZE THIS COLLABORATIVE EFFORT IN SUCH A WAY THAT UNITS OF MANAGEMENT AND PROCUREMENT ARE HANDED AS UNIFORMLY AS POSSIBLE AND THAT SIMILAR ITEMS ARE PURCHASED FROM THE SAME SOURCE BY THE SAME COUNTRY. UPON RECEIPT OF THE DRAFT WE WILL PROCEED WITH THE MEETING AND CAN LIKELY ANSWER ALL THE REF B QUESTIONS AT ONE TIME. WE CAN REPORT SUGGESTIONS AND REACH CONSENSUS BY CABLE. THIS APPEARS THE FASTEST WAY TO PROCEED. HOPE AID/M CONCURS. HAPPY NEW YEAR.

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SECSTATE WASHDC 3787

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AIDAC

E. O. 12065: N/A
SUBJECT: POLYTECHNIC PP DESIGN/812-021

REF: 9/14/79 PATRIC/COLE TELECON

1. DATA REQUESTED PER REPTELCON AS FOLLOWS:

A. POLYTECHNIC

- 1) 400 PART-TIME DAY STUDENTS WILL REMAIN THE SAME OVER L. O. F. ENROLLMENT BASICALLY DURING VACATION PERIODS, I. E. SUMMER AND HOLIDAYS.
- 2) 2,500 PART-TIME EVENING STUDENTS AT ALL UNITS ALSO REMAIN SAME. MAXIMUM NUMBER COLLEGE CAN HANDLE.
- 3) ATTRITION RATE FOR CERTIFICATE AND DIPLOMA HOLDERS LESS THAN 5 PERCENT OF TOTAL INTAKE. TEAM WAS GIVEN DETAIL BREAKDOWN OF INTAKE.
- 4) GRAY REPORT-CHART MISLEADING. SHOULD READ 50 DIPLOMA AND 50 CERTIFICATE AS PRESENT INTAKE 100 FOR EACH LEVEL IS PROJECTED UNDER PROPOSED PROGRAM. ATTRITION RATE LESS THAN 5 PERCENT.
- 5) TOTAL NUMBER OF AID TRAINED POLYTECHNIC PARTICIPANTS UNDER INITIAL GRANT-SIXTEEN (16-THREE FEMALE THIRTEEN MALE. ONE DEATH; ONE UNEMPLOYED; THREE MARRIED BUT EMPLOYED IN SENIOR POSITIONS, I. E. RESERVE BANK M. O. S. S. AND FISHERIES AND REMAINING ELEVEN EMPLOYED POLYTECHNIC.

(A) LONG TERM TRAINING

- 1. P. CHIKHULA- PHD. ECON USA
- 2. A. PHIRI- PHD. ENGLISH USA
- 3. M. R. MUMBWA-PHD. MATHS USA
- 4. C. CHIRONDONGO-BUILDING- UK
- 5. E. BAKAIMANI- ELECTRONICS UK

(B) TEACHING STAFF

- 6. A. V. KAMBALAMETORE
- 7. C. MATUPA
- 8. F. CHEPANI
- 9. H. NGAIYAYE
- 10. E. VALERA
- 11. A. MPHANDE

5) PARTICIPANT COST- ODM-64 PY 8,750 DOLS PER YEAR
TOTAL 560,000 DOLS. E. D. F. 8 PY. 8,750 DOLS PER YEAR.
TOTAL 70,000 DOLS GOM PARTICIPANT COST APPROX 7,000 MK
(DOLS 2,680) PER YEAR.

7. TECHNICAL ASSISTANCE COST- ODM 48 PY, 18,000
(TOPPING) PER YEAR, TOTAL 862,000 DOLS. EDF 6 PY
25,000 DOLS (TOPPING) PER YEAR TOTAL 154,000 DOLS.
GOM 54 PY 10,000 MK PER YEAR, TOTAL 700,000 DOLS.

2. ATTEMPTING SECURE REMAINING DATA, I. E. FINANCE AND BOWERS ON LEAVE.

3. POLYTECHNIC INTERESTED IN KNOWING IF TRANSPORTATION VEHICLE(S) INCLUDED IN PROJECT. REQUESTING TWO 70 PASSENGER BUSES COST MK45,000 EACH. HORAN

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AFR/SA, VCANDERSON
AFR/DP, DWILSON
AFR/DP, W. JONES
AFR/DR/EHR, FMOORE
AFR/DR/SDP, BBOYD
AFR/DR/ENGR, FZCBRIST
DS/ED, RSCHMEDING (INFO)
GC/AFR, JPATTERSON (INFO)
NESA/TECH, T. MCDONOUGH (INFO)
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AIDAC, NAIROBI FOR REDSO/EA

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TAGS:

SUBJECT: MALAWI POLYTECHNIC (612-0201)

1) SUBJECT PID IS APPROVED WITH THE STIPULATION THAT THE MANPOWER SURVEY OUTLINED IN ANNEX A BE COMPLETED AND THE RESULTS REVIEWED BY AID/AFR BEFORE REPERATION OF THE PP COMMENCES. IF THERE IS AN INSUFFICIENT SUPPLY OF POTENTIAL ENGINEERING STUDENTS OR AN INSUFFICIENT POTENTIAL FOR PLACEMENT OF QUALIFIED ENGINEERS IN THE FUTURE, IT MAY BE NECESSARY TO MAKE AN AID CONTRIBUTION TO THIS PROJECT CONTINGENT UPON A GOM AGREEMENT TO ACCEPT A SPECIFIC NUMBER OF ENGINEERING STUDENTS PER YEAR FROM OTHER COUNTRIES OF SOUTHERN AFRICA.

2) THE PROJECT COMMITTEE SUGGESTS THAT THE PP DESIGN TEAM GIVE PARTICULAR ATTENTION TO THE FOLLOWING ASPECTS OF THE PROJECT:

A) DEMONSTRATING THE IMPACT OF ENGINEERING OUTPUT UPON THE RURAL POOR;

B) POSSIBLE NEED FOR STRENGTHENING SCIENCE AND MATH PREPARATION IN FEEDER SCHOOLS TO MAKE UPGRADING OF POLYTECHNIC'S PROGRAM FEASIBLE. VANCE

Telegrams: FINANCE, Lilongwe
Telephones: Lilongwe 2301
Communications should be addressed to:
The Secretary to the Treasury



MINISTRY OF FINANCE
P.O. BOX 31049
LILONGWE
MALAWI

19th May, 1977

His Excellency the Ambassador,
Embassy of the United States of America,
P.O. Box 30016,
LILONGWE 3.

ATTENTION: Mr. H.A. Hoffman

Your Excellency,

UNIVERSITY OF MALAWI: POLYTECHNIC

The Government of Malawi is planning the expansion of the Polytechnic in Blantyre in order to start training engineers and accountants to graduate levels.

The project has been divided into two sections as follows:-

- (a) Expansion of Engineering Training; and
- (b) Expansion of Accountancy Training.

The objectives of the courses are given on pages 2 and 4 of the Project Submission, two copies of which are attached for your perusal.

We have been examining the possibility of co-financing for the project and indications are that this is feasible. As at present, we have had discussions, on a very preliminary level, with the British Government and the U.N.D.P. However, all the time that we have been having these preliminary discussions, we recognised the fact that the development and financing of the Polytechnic was done with the aid of your Government and, therefore, we could not go on putting together the financial package without approaching your Government.

We are, therefore, now submitting an official request to your Government for participation in the development of the Polytechnic. We would welcome detailed discussions with you if the attached Project Submission does not provide all the answers.

I am, Your Excellency,
Your Excellency's obedient servant,

C. L. Ngandu
for SECRETARY TO THE TREASURY

Telegrams: FINANCE, Lilongwe
Telephone: Lilongwe 31311
Communications should be addressed to:
The Secretary to the Treasury



In reply please quote No. 19/16/21/123.

MINISTRY OF FINANCE
P.O. BOX 30049
LILONGWE
MALAWI

21st April, 1980

AID Representative,
American Embassy,
P.O. Box 30015,
Capital City,
LILONGWE 3.

(Attention: Mrs. V. Anderson)

Dear Madam,

UNIVERSITY OF MALAWI : POLYTECHNIC

The Government of Malawi is undertaking the expansion of the Polytechnic in Blantyre in order to start training engineers and accountants to graduate levels and the Development Proposals which have been approved provide for:-

- (a) Expansion of Engineering Training, and
- (b) Expansion of Accountancy Training.

The objective of this development for the Polytechnic is to train the much needed personnel locally in the fields of Engineering and Accountancy and thereby avoid as much as possible expatriate recruitment in the future.

Other possible donors have been approached with a request that they finance some parts of the development programme and so far the British Government, the EEC and the ADF have shown their willingness to participate in this project.

However, in view of the interests shown earlier in the Polytechnic by the United States Government it has been found necessary to ask you for the possible participation by AID in this project. Accordingly, therefore, I am now formally requesting that USAID should consider seriously participating in the new proposals for Development of the Polytechnic, University of Malawi.

Yours faithfully,

A handwritten signature in cursive script, appearing to read 'P.N.D. Kaluma'.

P.N.D. Kaluma
SECRETARY TO THE TREASURY

for