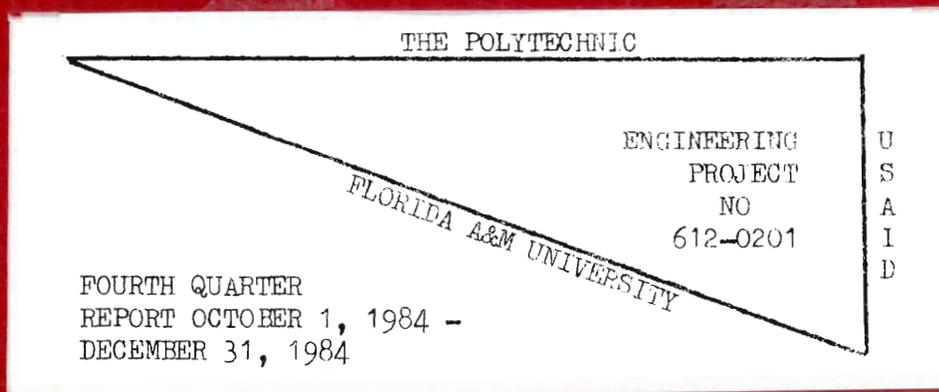


BEST AVAILABLE COPY

**UNIVERSITY OF MALAWI**  
**THE POLYTECHNIC**  
**ENGINEERING PROGRAM**



**Technical Assistance Project**

**College of Engineering Science and Technology**

**FLORIDA A & M UNIVERSITY**

**The United States Agency for International Development**

UNIVERSITY OF MALAWI - THE POLYTECHNIC  
FAMU/USAID POLYTECHNIC PROJECT

The Polytechnic  
P/Bag 303  
Chichiri  
BLANTYRE 3

31st December, 1984

Mr. Sheldon W. Cole  
USAID Representative  
NICO House  
P.O. Box 30455  
Capital City  
LILONGWE 3

Dear Mr. Cole:

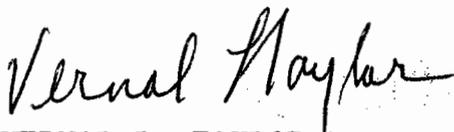
This Fourth Quarter Progress Report - October 1, 1984 to December 31st 1984 - reflects the activities of the FAMU/USAID Technical Assistance Team at the University of Malawi - The Polytechnic.

Technical Assistance Team Members - whose assignments included teaching - were assigned teaching loads which average out to be normal, and challenging. Most elements of the Industrial Counselor's work have either been put into operation, or they will be shortly. There are yet some phases to be developed.

In addition to carrying on normal classroom, Laboratory, and other routine work, the Team continued monthly meetings to discuss such contract elements as implementation plans, and procedures for curriculum evaluation, project evaluations, faculty evaluations, procurement of engineering, science, and library equipment; etc.

I am happy to report that all phases of FAMU/USAID Polytechnic Technical Assistance Project are progressing in a timely manner. Further, we appreciate the support you have given to our efforts here at the Polytechnic.

Sincerely



VERNAL L. TAYLOR  
CHIEF OF PARTY & INDUSTRIAL COUNSELOR

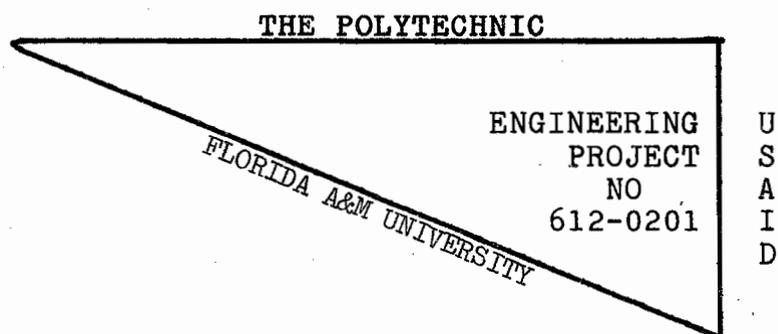
11

THIRD QUARTER REPORT

OCTOBER 1, 1984 - DECEMBER 31, 1984

CONTRACT NO AFR 021 C 00 3014 00

UNIVERSITY OF MALAWI ENGINEERING PROGRAM



COLLEGE OF ENGINEERING SCIENCE & TECHNOLOGY

FLORIDA A&M UNIVERSITY

THE UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

111

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## I INTRODUCTION

Florida Agricultural and Mechanical University (FAMU) Technical Assistance Team has been assigned to the University of Malawi's Polytechnic to carry out an engineering project contract - agreement between FAMU and the United States Agency for International Development (USAID).

The objectives of the Technical Assistance services are to provide specialized expertise in engineering through classroom instruction and to assist the Principal and Department Chairmen of the Polytechnic in developing, reviewing assessing and, as necessary, modifying the Institute's existing curriculum.

The purpose of the Project is to improve and expand the institutional capability of the Polytechnic Institute to produce Malawian Engineering Manpower for Government, Industry and Private Sectors.

This is the Fourth Quarter Report, and it principally covers the period October 1, through December 31st, 1984.

II HIGHLIGHTS

Assistant To Industrial Counselor Approved - Because of increased responsibilities for the Industrial Career Counselor, and Chief of Party, a request for approval of funds to hire an assistant was submitted to USAID/Malawi. The request was honored, and as a result Doctor (Mrs) M. P. Gill - wife of Professor Ajit S. Gill - has begun part time work with the Industrial Counselor.

Prior to joining her husband in Malawi Dr. Gill worked at the University of Toronto as an educational research specialist. Listed below are some segments of the Industrial Counselor's scope of work Dr. Gill will be concerned.

1. Compiling and analyzing data collected from Training and Job Analysis Survey.
2. Making evaluations to determine effectiveness of Industrial Attachment Programs.
3. Preparation of data collected from Industrial Attachment evaluations on the individual student so that the newly computerized student records can be updated.
4. Help in the preparation and administration of a survey on Polytechnic graduates.
5. Help in the preparation of an Industrial Attachment student - supervision - handbook.

Counterparts to the Industrial Counselor will be kept informed, and they will participate at various levels.

#### Procurement

Specifications have been prepared and request for bids are underway for local purchase of standard (loose) steel furnishing for the new USAID science building.

Mr. John Mlambala University of Malawi, Estates Development Officer II is incharge of this phase of Florida A&M University/USAID procurement contract. Provision for this purchasing arrangement is stipulated in the Project Paper.

#### Consultancy

A Computer - Microprocessors specialists is scheduled to arrive at the Polytechnic during the first week in May 1985.

Professor James L. McCloud of Florida A&M University has agreed to service as consultant to FAMU/USAID Technical Assistance Team in the area of microprocessors design, programming and applications for engineers. Professor McCloud is incharge of classroom instruction and laboratories for both, Florida A&M University's engineering technology, and engineering programs.

### III TECHNICAL ASSISTANCE TEAM ACTIVITIES

During the, fourth quarter, Technical Assistance Team Members - whose assignments included teaching - were assigned teaching loads which average out to be normal, and challenging. On a fairly short notice two classes were assigned to Professor Rigby for which he had to develop and teach. Judging from the time spent, and energy exerted by him, he must have done a very good job. He vows to continue development on those course.

Professor Ernest Erickson has just completed his first term at the Polytechnic. He appeared to have had not too much trouble in adjusting to the on going teaching method.

Professor Gill took on a fairly heavy teaching assignment, and from all indications he will be heavily occupied with teaching assignment during the first quarter of 1985.

Most of the elements of the Industrial Counselor's work have either been put into operation or they soon will be. There are yet some phases to be developed.

In addition to normal classroom teaching and other routine work; the Team met monthly to discuss such topics as:

1. Strategy for curriculum evaluation.
2. Classroom and office schedules.
3. Project evaluations.
4. Review of contract.

5. Brief evaluation of progress on a department by department basis.
6. Procurement of engineering laboratory equipment.
7. The need for contract extension etc.

The following are the individual team member's descriptions of his activities during the fourth quarter:

Dr. Ernest E. Erickson, Professor of Electrical Engineering.

Dr. Ajit S. Gill, Professor of Civil Engineering.

Mr. Vernal L. Taylor, Industrial Counselor and Chief of Party.

Mr. Cornel J. Rigby, Associate Professor of Mechanical Engineering.

PROGRESS REPORT

1st OCTOBER - 31st DECEMBER, 1984

DR. E. E. ERICKSON

The responsibilities of the Electrical Engineer on the FAMU/USAID Polytechnic Project are briefly stated as follows:

- A. Teach Electrical Engineering courses, both classroom and laboratory.
- B. Assist in developing a relevant curriculum basic to obtaining B.Sc. and M.A. degrees in Electrical Engineering.
- C. Provide in service training to Electrical Engineering Teaching assistants to upgrade their skills.
- D. Recommend practical changes in the current curriculum for diploma certificates.

This progress report will discuss each of these areas.

A. Teaching:

I was assigned three classes for the first term of 1984-85 academic year - ET-3 Circuit Theory for Technicians, D5 - Electrical Technology (Electronics), and D6 - Electronics. The ET-3 class consisted of 11 students starting Part II of the Electrical Technician Program. These students returned to their jobs at the end of the term and will be back in school in September, 1985. The D5 class consisted of 15 mechanical and electrical engineering students, fifth year. The D6 class consisted of three, sixth year, electrical

engineering students. This last class was shared with Mr. Jaworski who taught analog electronics for half of the term and I taught digital electronics for the remainder of the term. The most difficult part of teaching these classes was due to the fact that the students do not have text books and no text books are specified or recommended in the syllabi. I searched the library for a few books appropriate for these courses. I did not conduct any laboratory experiments this first term. Laboratory time must be taken from classroom time.

B. Engineering Curriculum

The COP has requested the team members to make a detailed evaluation of each of the engineering courses and the relevant courses in mathematics, physics, chemistry, etc. To this end, I am collecting syllabi of all electrical engineering courses. I have been appointed to the college committee working on the diploma/engineering curriculum.

C. Teaching Assistants

No counterpart for training has been assigned as yet. Two Malawians on the Electrical Engineering staff are under consideration and I'm sure one will be appointed at the beginning of the next term.

D. Diploma Curriculum

I participated in an Electrical Engineering Department meeting in which the new D1 (first year) curriculum was

discussed and the proposed D1-Electrical Science syllabus was considered. No final decision was made on the syllabus so it was assigned to a committee for further work. I believe the difficulty concerning the D1-Electrical Science syllabus lies in the fact that Diploma/Engineering students and technician students all take the same D1 courses. As the entrance requirements for these students are quite different, it is impossible to devise a course that meets the needs of all students.

In addition to the above duties, I reviewed the two equipment lists presented by the Electrical Engineering Department.

Memo : Mr. V. L. Taylor, COP, FAMU/USAID Technical Project

FROM : Professor A. S. Gill, Technical Assistance Team Member, Civil Engineering

SUBJECT : QUARTERLY PROGRESS REPORT FOR PERIOD OCTOBER TO DECEMBER, 1984

This memorandum furnishes a Progress Report of the writer as member of the FAMU/USAID Technical Assistance Team to the Polytechnic for the period indicated above.

#### 1.0 GENERAL

The academic session for the year 1984-85 commenced at the Polytechnic in the first week of October, 1984. On account of my being under treatment in South Africa as a result of injuries sustained in an accident, I commenced actual teaching at the Polytechnic on October 20th, 1984. During my enforced absence, my colleagues taught their courses during the teaching time allotted for me. Upon my return, I have made up for the lost teaching time.

#### 2.0 PROJECT OBJECTIVES AND PROGRESS

The following courses were taught by me during the first term of the academic year 1984-85:

1. Transportation for sixth year degree students (D6C): 2 hours per week.
- ii. Hydraulics and Hydrology for D6C: 4 hours per week.
- iii. Geotechnics for D6C: 2 hours per week.

iv. Surveying for D2: 4 hours per week (average).

Besides instruction of the courses listed above, I supervised Technical Projects of two D6C students out of a total of six D6C students at the Polytechnic.

## 2.2 Instructional Material

On account of non-availability in Malawi of technical U.S. publications, some technical manuals were ordered from the U.S. Asphalt Institute for design of road pavement and road construction. These publications have since been received and are intended to be used for instruction of the Transportation course during the second term of the current academic year.

## 2.3 Make Recommendations For Degree Syllabus

The Polytechnic has currently an active committee charged with framing recommendations for revision of the current degree program. Realizing that attendance of meetings of this committee would be beneficial to me in framing recommendations as FAMU/USAID team member for the degree syllabus, I secured permission from the chairman of the committee to participate henceforth in its meetings.

Appraisal of the current degree program independently of the work of the Polytechnic committee is in progress with a view to furnishing recommendations in this regard by me as member of the FAMU/USAID team. Some general notes on the current degree program were prepared by me with input from Professor Hazeltine (who has

since completed his contract as FAMU/USAID team member). These notes have been distributed to the team members for sharing ideas in this regard.

#### 2.4 In Service Training To Counterparts

I have worked with Mr. Chikoko, Laboratory Technician, who has been designed as a counterpart to receive training. During the period under report, Mr. Chikoko was introduced to setting up and carrying out of triaxial tests on soil samples. In addition he was of assistance in fabricating special moulds for preparations of test specimens of stabilized soil and of clay with grout threads. These moulds were required by the two D6C students working on their Technical Projects under my direction.

#### 2.5 Other Contributions

1. The Academic Course committee of the University of Malawi at its meeting on 3rd May, 1984, appointed me supervisor for Mr. J. R. Roome for his work for M.Sc. degree in Civil Engineering. Mr. Roome, who holds a degree from Britain in Civil Engineering and is a Member of the British Institution of Civil Engineers, is a Senior Lecturer at the Polytechnic. It is my understanding that he is the only Master's level student at the University of Malawi in the field of engineering.
2. In July 1984, I was admitted to membership of the Malawi Group of Professional Engineers.

3. I have been designated as class Tutor for D6C students for the academic year 1984-85. In this capacity I have been advising D6C students in matters of academic or non-academic concern to them.

### 3.0 CLOSURE

The end of the first term of the academic year 1984-85 in December, 1984, marks the mid-period of assignment of the FAMU/USAID team. It is believed that fulfilment of the Project, objectives in so far as the writer's contribution is concerned, is on target.

*BEST AVAILABLE COPY*

VERNAL L TAYLOR - INDUSTRIAL COUNSELOR

The mechanism for implementing the already designed Industrial Counselling Program is in place. Some areas have been completed - man power needs survey, and the student computerized record keeping system - others need further development. Now that an assistance has been granted the Counselor, all activities should become accelerated. There is yet a few issues to be cleared, but as time goes on, all should fall into place.

The following semi log frame gives an up - to - date report on activities of the Industrial Counselor's program.

REVIEW OF INDUSTRIAL COUNSELOR'S PROGRESS  
THIRD AND FOURTH QUARTER

OUTPUTS	INDICATORS	ACTIVITIES
<p>1. Establish a guidance Counselling System which will help define where students should work when doing practical training.</p>	<ol style="list-style-type: none"> <li>1. Files on all engineering students on computer.</li> <li>2. File of all firms participating in Industrial Attachment Program.</li> <li>3. Student evaluation of Industrial work experiences on file.</li> <li>4. Industrial supervisor's evaluations of students work on file.</li> </ol>	<p>The system is presently in operation. Academic records of engineering and other students are being filed on the computer. Analysis of data from Training and Job Analysis Survey is nearing completion. Student Counselling is growing more systematic.</p>
<p>2. Established a records system capable of "Tracking" a student through the Polytechnic and monitoring the student's movement into the workforce or into post graduate work.</p>	<ol style="list-style-type: none"> <li>1. Computerized student record keeping system in operation.</li> <li>2. Mechanism's in place for maintaining up dated information on Industrial Attachment activities for each student.</li> </ol>	<p>This system has been completed. The system satisfies the output requirements as stated for both students and graduates. The system accomodates both engineering and non engineering student. All student records are being computerized.</p>
<p>3. Service as Liason Officer between the Polytechnic and the users of its output.</p>	<ol style="list-style-type: none"> <li>1. Record of Industrial visits, and communication linkage with firms.</li> <li>2. Evaluative remarks and/or reports-achieved through surveys, on file.</li> </ol>	<p>The system in operation. Industrial, Government, and Private firms are being visited, and will continue to be visited on a periodic basis. The Counselor and Counterparts participated in community activities concerned with engineering. Each student and his Industrial Attachment supervision provide datas that enable the Counselor to determine the effectiveness of the Program. The information is also passed on to department heads.</p>

THIRD AND FOURTH QUARTER

OUTPUT	INDICATOR	ACTIVITIES
<p>4. Ensure that proper administrative action is taken to train a counterpart so that this staff position becomes a permanent.</p>	<ol style="list-style-type: none"> <li>1. Name of counterpart of file.</li> <li>2. Counterpart communication linkage established with Counselor.</li> <li>3. Record of Counselor and counterparts visit to firms.</li> <li>4. Record of scheduled meeting.</li> </ol>	<p>4 faculty members of the Polytechnic have been assigned to counterpart with the Industrial Counselor instead of one. This arrangement should prove functional and provide the necessary continuity; however, this arrangement does not provide definitely for a permanent position for an Industrial Counselor as stipulated in contract.</p>
<p>5. Provide Industry - related Counselling to engineering students and others.</p>	<ol style="list-style-type: none"> <li>1. Record of Counselor - Counsellees conferences.</li> <li>2. Record of communication with students (forms letters, etc)</li> <li>3. Information bank established - feedback, and inputs students, graduates, and Industrial Personnel.</li> </ol>	<p>This part of the counselor's assignment has begun, but only on a small scale. Most of the counseling has been to engineering graduates. The mechanic is in place for providing this service.</p>

THIRD AND FOURTH QUARTER

OUTPUT	INDICATOR	ACTIVITIES
<p>6. Establish and maintain contact with public, Governmental and Private Sectors entities utilizing engineers and assist in further development of an information bank which can be used to advise Polytechnic students and graduates of employment opportunities.</p>	<ol style="list-style-type: none"><li>1. Preview of firms manpower needs on file.</li><li>2. Copies of students applications for job on file.</li><li>3. Copies of students applications for Industrial Attachment experience.</li><li>4. Letters of inquire.</li></ol>	<p>Training and Job Analysis Survey Forms have been returned from firms. We are pleased with the participation and response received.</p> <p>Training and Job Analysis Survey Forms were designed to collect datas that would establish a foundation from which availability of jobs could be known. The forms have been returned, and the data is being analyzed. This initial investigation covers the period 1983 - 1988. From time to time this data will have to be up dated. This means, that Private, Governmental, and Industrial Sectors will be communicated with on a continuous basis.</p> <p>Graduates are getting counciling as to where the jobs appear to be according to indications by firms.</p> <p>The planning for a follow-up study on Polytechnic Graduates will begin soon. The necessary survey forms are being prepared. Again, the information gained from this study will be passed on to department heads and the administration.</p>

Best Available Document

UNIVERSITY OF MALAWI - THE POLYTECHNIC  
FAMU/USAID POLYTECHNIC PROJECT

TO: Mr. Vernal L. Taylor,                      DATE: 31st December, 1984  
Chief of Party

FROM: Mr. C. J. Rigby, *C. J. Rigby*  
Mechanical Engineer  
FAMU/USAID Technical Assistance Team Member

SUB: PROGRESS REPORT FOR THE PERIOD OCTOBER 1, 1984 THROUGH  
DECEMBER 31 1984

A. Teach Mechanical Engineering Courses both Classrooms and  
Laboratory

(1) Classroom Instruction

During this reporting period I taught the first term of two senior level mechanical engineering courses: D6/Process Engineering and D6/Solid Mechanics. As mentioned in the last report, the syllabus of each of these courses required major revision. The major objectives of these changes included: (1) to provide sufficient background mathematics to enable the students to learn at an efficient level (2) to incorporate some relevant laboratory experiments into the course (3) to organize the topics found in the first edition of this syllabus to allow a systematic approach of teaching the subject matter (4) to provide a professional level of engineering science and problem solving techniques.

A synopsis of each course is given below:

- (a) D6/Solid Mechanics - develops the fundamental relationship between the stress and strain tensors (generalized Hook's law) of an elastic solid and determines the deformation of beams, plates, cylinders, shells, pressure vessels and machine parts due to various applied loads. Discusses the basic laws of plasticity and such metal working processes as extrusion, hot and cold rolling, wire drawing and cup drawing.
  
- (b) D6/Process Engineering - develops the fundamental equations of momentum transport through viscous fluids; of heat transport through solids, liquid and gaseous bodies and through regions of vacuum; and of mass transport by diffusion of fluid/fluid and solid/fluid systems. Applies these equations to common process subsystems. Deals with the design and analysis of systems such as: pump/pipe line flow, heat exchangers, gas mixing, humidification and drying, solar thermal collectors, packed tower absorbers and particle separation.

A serious problem remains on the part of the students: Lack of text books. I understand that the students can only afford to purchase a couple text books to cover about six

courses. For this reason a required text book list was not assigned. Instead I have constructed lecture notes from several sources and handed them out for reading materials. Between terms, I practiced using a word processor computer program to develop my lecture notes. More about this effort in the next report.

Results from the first term examinations indicated that the students met the challenges of the high course level with some success. In both classes the grades ranged from "PASS" (3 in a scale of 6) "NEAR DISTINCTION" (5 in a scale of 6). I am looking forward to working further with this group of students next term

#### (2) Laboratory Instruction

One of the changes made to the existing syllabuses for D6/PE and D6/SM was to include laboratory experiments. I furthered the development of two of the laboratory apparatus that I mentioned during the last report. For D6/PE, we successfully ran the Laminar/Turbulent Pipeflow Experiment. And we obtained meaningful data using the Thick Cylinder Apparatus for D6/SM.

#### B. Provide In - Service Training to Mechanical Engineering Teaching Assistance

During this reporting period, my Malawian counterpart - Mr. Chiwawa - and I discussed using the computer as a teaching aid and for problem solving. He expressed a particular

interest in learning to program in FORTRAN. We have begun working together on one of the RAINBOW 100 computers provided by the Contract. Our first goal is to install some useful scientific and engineering programs on disk storage. Another Malawian lecturer is scheduled to begin here during the second term. He has been assigned by the department chairman to assist me in teaching D6/Solid Mechanics.

C. Assist in Developing a Relevant Curriculum Basic to Obtaining the B.Sc. and M.A. Degrees in Mechanical Engineering

My involvement in the area of degree curriculum development for the mechanical engineering department was mainly limited to improving two courses: D6/Process Engineering and D6/Solid Mechanics. The objectives of the changes made in the existing syllabuses are outlined in part A of this report. The detailed course outlines made are undergoing small revisions as the school year progresses but will be finalized during the second term. These revised syllabuses were implemented last term.

At several meetings held at the level of the Dean of the Faculty of Engineering, major revisions of two courses were discussed and implemented. I participated in discussions that resulted in the new courses D5/Dynamics and Measurement and D6/Control Systems.

D. Recommend Practical Changes in the Current Curriculum for Diploma Candidates

One point that most at the Polytechnic will agree on is that the Diploma Curriculum serves many functions: (1) provides the basic maths and science background in D1 for City & Guild technicians, (2) provides a three year terminal program for Diploma candidates, (3) provides for training of secondary science teachers, and (4) provides the first three years training for those who will go on to the Degree Program. Many constraints are inherent in such a multi-purpose program, one discovers when one attempts to conceive of and recommend changes for improving the curriculum.

Committees at the department level and at the college level have been meeting on a regular basis to revise the current Diploma Curriculum. One change that has wide support of faculty and administration is to intensify the science courses in D1 and D2. Several courses affected by the intensification effort have been revised at the committee level and await approval at the college level. Such changes will be a good improvement for all categories of students. I have also participated in regular meetings called by the COP to discuss approaches for improving the Diploma and Degree curriculums.

#### IV RECOMMENDATION

The following are recommendations believed necessary to help the technical assistance team, and also to assist the total USAID Polytechnic Project more nearly realize the expected end results.

1. That a team of American Engineering Educators visit the Polytechnic for the purpose of consulting with team members, and reviewing the individual and collective progress of the team. Such a team would consist of active members of the American Society for Engineering Education (ASEE). Each area of engineering, - civil, mechanical, electrical, and Industrial Counselling would be represented. An estimated figure of \$22,000.00 should be adequate to provide for such a service.
2. That planning for the initial meeting of the Project's Advisory Council get underway. It has been proposed that the Council should hold its initial meeting in Malawi, and then follow up with a second meeting in the U. S. A.
3. That plans begin for the mid way-project evaluation. Because of the delayed and staggering beginning dates for each segment of the project, evaluation procedure as planned must have become more complicated.

V FIELD EXPENDITURES

## FIELD ACCOUNT BY CODE

24

CHECK #	DATE	VENDOR	ITEM	PURPOSE	AMOUNT K
* BUDGET CODE 1					
123692	25/10/84	MS. SEETA SHARMA	SALARY		211.00
162312	21/11/84	MR. BINALI	REPORT COVERS	BINDING REPORT COVERS	25.00
162316	28/11/84	MS. SHARMA	SALARY		211.00
162320	07/12/84	WATCHMAN	SALARY	SERVICE K12/WEEK	120.00
162324	20/12/84	MS. SHARMA	SALARY		211.00
162325	20/12/84	MS. SHARMA	SALARY		15.00
** SUBTOTAL **					793.00

## FIELD ACCOUNT BY CODE

- 25 -

CHECK #	DATE	VENDOR	ITEM	PURPOSE	AMOUNT K
* BUDGET CODE 5					
123681	01/10/84	ESCOM	ELECTRICITY BILL	UTILITIES/HOUSEHOLD	321.68
123682	01/10/84	MALAWI POST OFFICE	TELEPHONE BILL	COMMUNICATION	115.25
123683	01/10/84	BLANTYRE WATER BOARD	WATER BILL	UTILITIES/HOUSEHOLD	103.09
123686	04/10/84	AMI RENNIE PRESS	PRINTER	DR. ERICKSON	128.12
123687	04/10/84	GLENS MALAWI LTD	SHIPPING		1049.52
123688	04/10/84	DAILY TIMES	NEWSPAPER	NEWSPAPER SUPPLY FOR ONE YEAR	46.98
123689	19/10/84	V. L. TAYLOR	PETTY CASH		100.00
123691	22/10/84	PPS	STATIONARY	OFFICE SUPPLIES	28.65
123694	26/10/84	STANSFIELD MOTORS	NEW JACK	REPAIRS ON REAR WINDOW	200.38
123695	25/10/84	ESCOM	ELECTRICITY BILLS	UTILITIES/HOUSEHOLD	261.14
123696	26/10/84	STANSFIELD MOTORS			6.00
123697	31/10/84	BLANTYRE WATER BOARD	WATER BILL	UTILITIES/HOUSEHOLD	170.22
123698	31/10/84	MALAWI POST OFFICE	TELEPHONE BILL	COMMUNICATION	46.50
123699	01/11/84	BLANTYRE WATER BOARD	WATER INSTALLATION	UTILITIES/HOUSEHOLD	10.44
123700	01/11/84	MALAWI POST OFFICE	PLUGS AND SOCKETS	FOR TELEPHONE	19.00
162301	02/11/84	PPS	STATIONARY	OFFICE SUPPLIES	59.30
162302	06/11/85	GASKELLS LTD	TONER FOR COPIA 1000	OFFICE SUPPLIES	53.00
162304	08/11/84	MR. V. L. TAYLOR	PETTY CASH	FUEL DUE TO FUEL PROBLEMS	100.00
162305	09/11/84	MALAWI GOVERNMENT	TAX	MS. SHARMA MONTHLY TAX PAY	90.00
162306	14/11/84	AMI RENNIE PRESS	PERSONAL EFFECTS	HOUSEHOLD	99.90
162307	15/11/84	AMI RENNIE PRESS	COMPUTER PARTS	FOR PROJECT	108.76
162309	19/11/84	BLANTYRE WATER BOARD	WATER BILL	UTILITIES/HOUSEHOLD	48.00
162314	28/11/84	ESCOM	ELECTRICITY BILL	UTILITIES/HOUSEHOLD	292.93
162315	28/11/84	MALAWI POST OFFICE	TELEPHONE BILL	COMMUNICATION	1175.75
162317	30/11/84	BLANTYRE WATER BOARD	WATER BILL	UTILITIES/HOUSEHOLD	184.36

26

## FIELD ACCOUNT BY CODE

CHECK #	DATE	VENDOR	ITEM	PURPOSE	AMOUNT K
* BUDGET CODE 5					
162321	13/12/84	J. S. KANABAR	LOCK FOR CAR	TYRE RACK LOCK	10.50
162322	19/12/84	AMERICA EMBASSY	FOR SHOTS	TEAM MEMBERS	57.93
162323	19/12/84	AIR MALAWI			119.50
162326	27/12/84	POST OFFICE	MAILING	PROCUREMENT MATERIAL	14.50
163610	12/11/84	PPS	STATIONARY	OFFICE SUPPLIES	97.71
** SUBTOTAL **					5119.11

## FIELD ACCOUNT BY CODE

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* BUDGET CODE 7					
123684	02/10/84	UNIVERSITY OFMALAWI	POLYTECHNIC TELEPHON	COMMUNICATION TO SOUTH AFRICA	22.25
123685	04/10/84	UNIVERSITY OF MALAWI	POLYTECHNIC	FUEL, STATIONARY ETC	1566.50
123693	23/10/84	DR. GILL	REIMBURSEMENT		17.09
162303	07/11/85	MR. RIGBY	REIMBURSEMENT	TEACHING SUPPLIES	36.30
162308	19/11/84	DR. GILL	REIMBURSEMENT	TEXT BOOK	20.83
162313	28/11/84	POLYTECHNIC U.O.M	REIMBURSEMENT	FUEL, BOOKSTOR ETC.	1768.61
** SUBTOTAL **					3431.58

FIELD ACCOUNT BY CODE

CHECK #	DATE	VENDOR	ITEM	PURPOSE	AMOUNT K
* BUDGET CODE 8 162318	06/12/84	MR. MANYELA	PER DIEM DRIVER	TRAVEL PER DIEM	4.50
** SUBTOTAL **					4.50
** TOTAL **					9348.19

VI ACCOUNTING

DATE	BAL. FORWARD (KWACHA)	DEPOSIT (US. \$)	EXCHANGE RATE (US. TO K)	GAIN IN (KWACHA)	TOTAL (A+B+D) (KWACHA)	LESS PAYMENT (KWACHA)	BAL (KWACHA)	EXPI CODE	CHEQUE NO.
01/10/84	1214.11	-	-	-	1214.11	321.68	892.43	5	123681
01/10/84	892.43	-	-	-	892.43	115.25	777.18	5	123682
01/10/84	777.18	-	-	-	777.18	103.09	674.09	5	123683
02/10/84	674.09	-	-	-	674.09	22.25	651.84	5	123684
04/10/84	651.84	3460.44	.6787	1638.18	5750.46	25.43	5725.03		Bank Charges
04/10/84	5725.03	-	-	-	5725.03	1566.50	4158.53	7	123685
04/10/84	4158.53	-	-	-	4158.53	1049.52	3109.01	5	123687
04/10/84	3109.01	-	-	-	3109.01	128.12	2980.89	5	123686
04/10/84	2980.89	-	-	-	2980.89	46.98	2933.91	5	123688
19/10/84	2933.91	-	-	-	2933.91	100.00	2833.91	5	123689
22/10/84	2833.91	-	-	-	2833.91	28.65	2805.26	5	123691
23/10/84	2805.26	-	-	-	2805.26	17.09	2788.17	7	123693
25/10/84	2788.17	-	-	-	2788.17	211.00	2577.17	1	123692
26/10/84	2577.17	-	-	-	2577.17	200.00	2377.17	6	123694

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*Kennel Taylor*

- CODE
- 1. Salaries
  - 2. Consultants
  - 3. Travel & Transportation
  - 4. Allowance
  - 5. Other Direct Cost
  - 6. Equipment, Vehicle Material
  - 7. Reimbursement
  - 8. Per - Diem

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	A	B	C	D	E	F	G	H	I
DATE	BAL. FORWARD (KWACHA)	DEPOSIT (US. \$)	EXCHANGE RATE (US. TO K)	GAIN IN (KWACHA)	TOTAL (A+B+D) (KWACHA)	LESS PAYMENT (KWACHA)	BAL (KWACHA)	EXPI CODE	CHEQUE NO.
25/10/84	2377.17	-	-	-	2377.17	261.14	2116.03	5	123695
26/10/84	2116.03	-	-	-	2116.03	6.00	2110.03	6	123696
31/10/84	2110.03	-	-	-	2110.03	170.22	1939.81	5	123697
31/11/84	1939.81	-	-	-	1939.81	46.50	1893.31	5	123698
01/11/84	1893.31	-	-	-	1893.31	19.00	1874.31	5	123700
02/11/84	1874.31	-	-	-	1874.31	59.30	1815.01	5	162302
01/11/84	1815.01	-	-	-	1815.01	10.44	1804.57	5	123699
06/11/84	1804.57	-	-	-	1804.57	53.00	1751.57	5	162302
07/11/84	1751.57	-	-	-	1751.57	36.30	1715.27	7	162303
08/11/84	1715.27	-	-	-	1715.27	100.00	1615.27	5	162304
09/11/84	1615.27	-	-	-	1615.27	90.00	1525.27	5	162305
14/11/84	1525.27	-	-	-	1525.27	99.90	1425.37	5	162306
15/11/84	1425.37	-	-	-	1425.37	108.76	1316.61	5	162307
19/11/84	1316.61	-	-	-	1316.61	20.83	1295.78	7	162308

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*Vernon Taylor*

CODE

- 1. Salaries
- 2. Consultants
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- 4. Allowance
- 5. Other Direct Cost
- 6. Equipment, Vehicle Material
- 7. Reimbursement

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	A	B	C	D	E	F	G	H	I
DATE	BAL. FORWARD (KWACHA)	DEPOSIT (US. \$)	EXCHANGE RATE (US. TO K)	GAIN IN (KWACHA)	TOTAL (A+B+D) (KWACHA)	LESS PAYMENT (KWACHA)	BAL (KWACHA)	EXPI CODE	CHEQUE NO.
19/11/84	1295.78	-	-	-	1295.78	48.00	1247.78	5	162309
20/11/84	1247.78	-	-	-	1247.78	97.71	1150.07	5	162310
21/11/84	1150.07	-	-	-	1150.07	25.00	1125.07	1	162312
22/11/84	1125.07	1182.13	.6702	581.71	2888.91	18.00	2870.91		Bank Charges
22/11/84	2870.91	2444.23	.6702	1202.78	6517.92	25.43	6492.49		Bank Charges
28/11/84	6492.49	-	-	-	6492.49	1768.61	4723.88	7	162313
28/11/84	4723.88	-	-	-	4723.88	292.93	4430.95	5	162314
28/11/84	4430.95	-	-	-	4430.95	1175.75	3255.20	5	162315
28/11/84	3255.20	-	-	-	3255.20	211.00	3044.20	1	162316
30/11/84	3044.20	-	-	-	3044.20	184.36	2859.84	5	162317
06/12/84	2859.84	-	-	-	2859.84	4.50	2855.34	8	162318
07/12/84	2855.34	-	-	-	2855.34	120.00	2735.34	1	162320
13/12/84	2735.34	-	-	-	2735.34	10.50	2724.84	5	162321
19/12/84	2724.84	-	-	-	2724.84	57.93	2666.91	5	162322

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- 7. Reimbursement

