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INTERIM EVALUATION REPORT
OF
LIBERIAN YOUTH-ON-THE-JOB TRAINING PROJECT

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PURSUANT TO: CONTRACT NUMBER:
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FOREWORD

The Interim Evaluation was conducted in partial fulfillment of U.S. AID Contract No. AFR-0160-C-00-1001-00. The Evaluation Report is based on a site visit conducted from November 2 through November 6, 1981 by Dr. Elizabeth A. Abramowitz, PSI President, and Mr. Joseph E. Butcher, PSI long-term resident project advisor.

The Evaluation Report was written in close consultation with the National Commission on Youth and Sports and the U.S. Agency for International Development/Liberia. Draft copies of the report were circulated to those agencies for review and comment.

The aim of the Interim Evaluation is to present an objective assessment of the project to date, and the possible barriers to meeting the terminal project objectives. Finally, the Evaluation Report suggests changes in the project design based on the evaluation results.

The Interim Evaluation Report is a partial outcome of the mid-project evaluation of the Youth-On-The-Job Training Program. The report summarizes the current status of the YOJT Program, the progress in reaching the stated objectives, and an analysis of the potential for reaching the goals and completing the tasks detailed in the Project Paper and the U.S. AID/PSI contract.

1. Description of the YOJT Program

The Youth-On-The-Job Training Program began in 1972 as a GOL-sponsored activity to (a) increase the number of Liberians in Monrovia in the skilled trades (i.e., Electricity/Electronics, Carpentry, Mechanics, Masonry/General Construction); and (b) reduce the unemployment rate of unskilled out-of-school youths. The program recruited youths in Monrovia and placed them in trainee positions in cooperating industries. The employers were to provide a subsistence monthly stipend which averaged about \$40 and to provide on-the-job training in all phases of the skilled trade.

The employers were responsible for training and evaluating the trainees. When they felt the trainees had achieved journeyman status, the employer was to "graduate" the trainee by signing a certificate and possibly adding the person to the permanent payroll.

The YOJT Program was housed in the Ministry of Labor and operated without a full-time director from 1972 to 1981.

The interim director divided her responsibilities between this program and other duties in the Ministry of Labor. Although firm numbers are not available, it is estimated that between 1972 and 1980, 1,221 trainees were placed with an estimated 82 employers who registered for the program. During that time, between 407 and 613 trainees "graduated" from the program. There were believed to have been more industries at one time in the program. Firm data describing all participants were not available. However, education attainment ranged from no formal schooling to grade school graduation.

Following consultations between the GOL Ministry of Labor and U.S. Agency for International Development, U.S. AID signed a grant agreement to provide two-year development assistance to the YOJT beginning 1979-80. The original project design outputs were according to the logical framework:

- 500 Trainees placed annually
- Increased employer participation
- 1,100 trainees completing the program with 75 percent employed

- Logistical and GOL-financed staff support
- Development of training programs, curricula, policies and procedures.

The original project design rested heavily on assumptions, later contradicted by facts, about the stability and viability of the Liberian economy and foreign investment upon which GOL economic growth heavily depended.

The aim of the project, since inception, has been to utilize the private sector in training, as well as employing, Liberian unskilled youth. The original design rests heavily on private industries' willingness to make relative small investments through stipends and staff, to increase the pool of employable workers in their sector.

Although there is some discontinuity in procedures and policies after January 1981, there is continuity in the overall project aim, and in the emphasis on private sector participation and investment.

2. Review and Chronology of PSI Activities

Review of PSI Activities: Task Analysis

PSI Associates, Inc. was awarded the two-year contract to provide technical and commodity assistance to the YOJT Program. The initial selection was made in March 1980, but because of the April 1980 revolution, negotiations were not concluded until November 1980. The PSI chief-of-party assumed position January 7, 1981. The GOL appointed the Liberian counterpart November 1981; interim and acting directors held the position until that time. In Spring 1981, the YOJT was transferred from the Department of Labor to the newly created National Youth and Sports Commission. An assistant director of General Technical Affairs Commission, including YOJT, was appointed September 1981.

PSI was to complete 12 tasks:

- Task 1: Develop a Life of Project.
(Completed March 1981 and revised November 1981).
See Exhibits A and 3.
- Task 2: Develop job descriptions for all project personnel and conduct staff evaluations.
(Completed job descriptions March 1981;
evaluations conducted July and November 1981).

- Task 3: Advise on the selection of trainees, supervisors, and project counselor.
(All supervisors were hired before COP arrived. Completed selection of counselor November 1981 and initial pretesting/interview/orientation of trainees in June through September 1981.)
- Task 4: Design and advise on implementing organizational, administrative and supervisory procedures for carrying out the YOJT program.
(Completed initially March 1981, revised October 1981) See Exhibit D.
- Task 5: Prepare training programs including instructional packages.
(Completed initially August 1981, on-going through life of project). See Exhibit H.
- Task 6: Design orientation and counseling program for trainees.
(Completed September 1981 for first two waves of trainees). See Exhibit H.
- Task 7: Develop systems for testing and supervising trainees, including follow-up during and after completion of the program.
(Completed July 1981).

- Task 8: Design system to measure performance standard.
(Completed initial standards October 1981;
to validate January - February 1982).
- Task 9: Assist GOL in the design and implementation
of participant training programs for Liberian
project personnel.
(Completed in-service workshops for all staff
July 1981; scheduled U.S. short-term training
for January - February 1981; in-service training
is on-going).
- Task 10: Provide professional advisory services to GOL
and US AID in general vocational apprenticeship
training.
(Began April 1981, on-going activities)
- Task 11: Provide a level of self-sufficiency and logistical
support for long-term and short-term contract
personnel.
(Completed all major commodities purchase and
6 person-months short-term advisors August 1981;
other support is on-going).
- Task 12: Design procedures to increase participation
of women in YOJT program.
(Began March 1981; design special placement
program October - November 1981).

As can be seen in comparing the original and the revised Life of Project Plans (Exhibits A and B), the all major project objectives are on time. However, changes in the Life of Project Plan are due to factors beyond the project staff control. For example, creation of the Advisory Board, composed of business leaders, has had to await final government decision or decree about the revitalization of the National Advisory Council on Education and Training.

In summary, the accomplishments of the first nine months of the project are:

- Introduction administrative procedures, policies, etc.
- Introduction of the General Aptitude Test Battery as a screening device for selecting trainees.
- Development of a non-verbal measure of quantitative skills and reasoning.
- Introduction of audio-visual techniques, including slide development, into the instructional program.

- Development of instructional packages and skill in their development and use by YOJT staff.
- Introduction of orientation and counseling programs before placement in training.
- Expansion of employer participation activities by all YOJT professional staff.

Chronology of PSI Activities

Included in this chronology are listings of the on-going activities of the project, the strengths and weaknesses of the project (along with suggested causes of problems). Some suggested activities to eliminate problems and strengthen weaknesses are included in Section 6 below.

Goals. The fundamental goal of this project is to assist in the development of an "adequate body of trainers manpower with relevant knowledge and skills to support the nation's socio-economic development." The direction for this assistance is by helping to upgrade the previously organized YOJT program, thus enabling it to place more and better trained semi-skilled workers on the job market.

The American advisor arrived in Monrovia January 7, 1981 and, after a brief orientation at US AID/Monrovia, was assigned to the National Youth and Sports Commission (formerly the Ministry of Labor, Youth and Sports).

Center Housing. Housing facilities for the project headquarters had been selected and a staff was functioning under the Director, Vocational and Technical Affairs. However, the locations of the staff were divided in that the selected facility was not furnished or oriented to the proposed use. Some members of the staff were housed at the Ministry while some were housed at an annex to the Ministry. This arrangement remained until the Ministry was split creating the National Youth and Sports Commission under whose portfolio the YOJT program fell.

The Ministry of Labor, Youth and Sports and the National Youth and Sports Commission Transition. This transition created several conditions - the staff could be housed under one roof, thus permitting regular contacts by the advisor and daily interchanges among the assigned staff. One main problem of this change resulted from the

fact that the equipment and furnishings for the building had not arrived. To alleviate the absence of furnishings, the staff made tables from materials used in renovating the building and borrowed chairs from an annex. Thus began formal implementation of the plans and re-organization which had been developed during the time this advisor was located at the Ministry.

Staff. The staff of the Center is currently composed of a Director (formally appointed November 1, 1981 after having served as Counselor and Acting Director), five subject specialist (the fifth, the general trades instructor was appointed November 1, 1981), one secretary (a senior secretary formerly assigned to the Center has been transferred to the central office of the Commission), two messengers, two custodians, two drivers, and two security guards. A job developer and a counselor aide are attached to the Center under the vocational education budget of the Commission. The job developer serves several units of the Commission and thus is unable to concentrate on the growing needs of the Center in soliciting training slots for prospective trainees.

Mobility. Transportation is a key to contacting industrial and commercial establishments and monitoring

the activities and progress of trainees. This problem was alleviated when the vehicles arrived in early June. The shortage of transportation prior to the arrival of the two vehicles severely hampered the mobility of the Center's professional staff. Consequently, delaying some vital implementation processes.

Furnishings. The Commission gave permission to use some budgeted funds to purchase 15 tables and 30 chairs which were used in the testing room and by the staff in office spaces when not employed in the testing room.

PSI Purchases. The furniture and equipment mandated under the contract agreement arrived and the organization of the physical facilities began reaching the suggested arrangements.

Testing. The screening vehicle (the General Aptitude Test Battery) arrived in mid-July and thus began the series of testing, which was recommended as one of the segments used in preparing aptitude profiles and in assigning prospective trainees to training slots in industrial and commercial establishments.

Some problems, naturally, exist relative to applicants adjusting to the fast pace of the test battery. Most applicants are not experienced in taking standard tests of any kind. The main problems seem to center around low verbal skills and relatively poor mathematical skills. Some degree of difficulty is noted in the concepts of form and spatial relationships.

The team at the Center has devised a non-verbal test for applicants who are low on academic achievement. This test with parts of the GATB, seems to be a fair indicator of possible potentials in some limited areas of training.

Test Observations. The percentage of applicants classified as possible non-verbal clients is comparatively low, although many of the individuals who indicate above fifth grade levels of achievement score relatively low on verbal, mathematics, and form perception. (See Section 3 below for Statistics). We would not assume any particular indicator of the competence of the public school system, although this may be a subject for future research when more samples are available and when raw data are available for an analysis.

3. Project Statistics

The following tables summarize project activities to date. The data also illuminate critical factors affecting the ability of the project to meet the original project outputs.

Table 1 summarizes participant data for trainees who entered the program after January 1981. These trainees were tested using the General Aptitude Test Battery (GATB), a very reliable measure of verbal and non-verbal vocational aptitudes. The GATB scores are keyed to specific job titles and predict likelihood of success in training in these job areas.

Table 2 summarizes the educational attainment and age of the new trainees. Over one-fourth of the trainees have completed high school; none has less than a sixth grade education and one has graduated from a post-secondary institution. The median age is 24 years old, with 26% of the trainees 30 years or older. In general, the trainees are older males with a minimum of elementary school completion. The median educational attainment is Grade 10.

The problems Tables 1 and 2 illuminate are (a) the low literacy level of trainees (which led the COP to develop a non-verbal screening devise); and (b) the low number of industries actively participating in the program by accepting trainees and providing subsistence stipends.

Table 3 summarizes the number of participants who entered the program and were placed between January and November, 1981. A total of 132 youths were placed for training in seven different industries. The industry receiving the largest number of trainees (21) was laundry.

Table 3 illiminates the impact of the slowness of the economy on training slots in the skilled trades.

Also noted in Table 3 is the low rate of trainee placement to date. Only about one-half of the 265 trainees tested and oriented (n = 52) have been placed in industries (n = 22).

TABLE 1a

GATB CUT OFF SCORES BY SKILLED TRADED

	Elec. & Elect	Auto Mech.	Welding	Plumb- ing	Carpentry	Cabinet Maker	Machin- ist	Air Cond.	Drafting	Masonry	Dry Cleaner
V	75	-	-	90	-	-	80	80	90	-	-
N	85	75	-	-	80	85	90	80	90	85	-
S	95	95	85	-	85	105	-	85	100	90	-
P	85	-	80	95	-	-	85	-	80	90	-
Q	-	-	-	-	-	-	-	-	80	65	-
K	90	75	-	-	70	-	-	90	90	85	80
F	90	75	-	-	-	-	-	-	80	-	80
M	100	90	85	35	80	85	80	-	80	80	70
G	90	70	70	70	70	70	70	70	100	65	65

TABLE 1b

GATB MEANS AND STANDARD DEVIATIONS FOR EACH SUBTEST BY LIBERIAN YOJT PARTICIPANTS

		<u>GATB SUBTESTS</u>								
		G	V	N	S	P	Q	K	F	M
N		60	62	61	63	61	62	62	59	60
X Mean		65	72	62	70	66	77	86	75	86
S.D.		15	7	16	10	19	10	14	18	21

TABLE 1C

COMPARISONS OF GATB CUT-OFF SCORES AND MEANS BY SKILLED TRADES

GATB SUBTESTS	SKILLED TRADES											
	Electricity/ Electronics			Auto Mechanics			Welding			Plumbing		
	Cut-Off	Mean	Diff.	Cut-Off	Mean	Diff.	Cut-Off	Mean	Diff.	Cut-Off	Mean	Diff.
(V) Verbal	75	72	-3	-	-	-	-	-	-	90	72	-18
(N) Numerical	85	62	-23	75	62	-13	-	-	-	-	-	-
(S) Spatial	95	70	-25	95	70	-25	85	70	-5	-	-	-
(P) Form Perception	85	66	-19	-	-	-	80	66	-14	95	66	-29
(Q) Clerical	-	-	-	-	-	-	-	-	-	-	-	-
(K) Motor Coordination	90	86	-4	75	86	11	-	-	-	-	-	-
(F) Finger Dexterity	90	75	-15	75	75	0	-	-	-	-	-	-
(M) Manual Dexterity	100	86	-14	90	86	-4	85	86	1	85	86	1
(G) General Intelligence	90	65	-25	70	65	-5	70	65	-5	70	65	-5

TABLE 1C (CONTINUED-2)

SKILLED TRADES

GATB SUBTESTS	Carpentry			Machinist			Air Conditioning			Drafting		
	Cut-Off	Mean	Diff.	Cut-Off	Mean	Diff.	Cut-Off	Mean	Diff.	Cut-Off	Mean	Diff.
(V) Verbal	---	--	---	80	72	-8	80	72	-8	90	72	-18
(N) Numerical	80	62	-18	90	62	-28	80	62	-18	90	62	-28
(S) Spatial	85	70	-15	--	--	---	85	70	-15	100	70	-30
(P) Form Perception	--	--	---	85	66	-19	---	--	---	80	66	-14
(Q) Clerical	--	--	---	--	--	---	---	--	---	80	77	-3
(K) Motor Coordination	70	86	16	--	--	---	90	86	-4	90	86	-4
(F) Finger Dexterity	--	--	---	--	--	---	---	--	---	80	75	-5
(M) Manual Dexterity	80	86	6	80	86	6	---	--	---	80	86	6
(G) General Intelligence	70	65	-5	70	65	-5	70	65	-5	100	65	-35

Table 1c (CONTINUED - 3)

GATB SUBTESTS	SKILLED TRADES								
	Masonry			Dry Cleaner			Cabinet Maker		
	Cut-Off	Mean	Diff.	Cut-Off	Mean	Diff.	Cut-Off	Mean	Diff.
(V) Verbal	-	-	-	-	-	-	-	-	--
(N) Numerical	85	62	-23	-	-	-	85	62	-23
(S) Spatial	90	70	-20	-	-	-	105	70	-35
(P) Form Perception	90	66	-24	-	-	-	-	-	-
(Q) Clerical	65	77	12	-	-	-	-	-	-
(K) Motor Coordination	85	86	1	80	86	6	-	-	-
(F) Finger Dexterity	-	-	-	80	75	-5	-	-	-
(M) Manual Dexterity	80	86	6	70	86	16	85	86	1
(G) General Intelligence	65	65	0	65	65	0	70	65	-5

NOTES FOR TABLES 1a THROUGH 1c:

All vocational areas have underlying aptitudes which the General Aptitude Test Battery (GATB) measures. Carpenters, for example, must possess some spatial aptitudes in order to "see" a design on paper. The following discussion summarizes our analysis of the aptitudes found in a randomly selected sample of YOJT youths tested in July, 1981.

The participants in this study were sixty-three on the job trainees, selected randomly from the total pool of over 200 tested. This represents a random sample of 25%. All participants were male, Liberian, unskilled, and with a median age of 24 years. 28% of the sample had completed the 12th grade.

The General Aptitude Test Battery (GATB) has nine subtests: General Intelligence (G), Verbal Aptitude (V), Numerical Aptitude (N), Spatial Aptitude (S), Form Perception (P), Clerical Perception (Q), Motor Coordination (K), Finger Dexterity (F), and Manual Dexterity (M).

Each of these subtests has a cut-off score associated with certain vocational trades to be considered a good candidate for training. The cut-off scores and the relevant aptitudes vary for different trades.

The GATB was designed in the United States, but has been used in many countries around the world. The performance items have been found to be particularly "culture-fair". The verbal items are culturally biased, because they reflect standard English as spoken and written in the United States. The only bias which was corrected by the PSI general COP was unfamiliarity with taking a timed test. To compensate for this, there were extra practice items before formal test administration began.

The means and standard deviations were calculated for the study participants for each of the subtests. These means were then compared to the cut-off scores for each of the following trades:

- 1) Auto Mechanic
- 2) Welding
- 3) Plumbing
- 4) Carpentry
- 5) Machinist
- 6) Air Conditioning Repairman
- 7) Drafting
- 8) Masonry
- 9) Dry Cleaning
- 10) Cabinet Maker

The results of the comparison are reported below for each vocational trade. The comparison is done using the mean for each subtest plus or minus one standard deviation. (See Table 1c).

NOTES FOR TABLES 1a THROUGH 1c (Cont'd)

- Electrician - Within one standard deviation, the Liberian Youths reached the cut-off score on five of the eight aptitude subtests seen as relevant for electrician training.
- Auto Mechanic - Within one standard deviation, the Liberian youths reached the cut off on all but one of the aptitude subtests.
- Welding - On three of the four subtests, the average Liberian in the YOJT reached the cut off score for welding training.
- Plumbing - On two of the four relevant subtests, the YOJT participants reached the cut-off scores.
- Carpentry - For carpentry, five of the GATB subtests are seen as relevant for this trade. The YOJT participants reached the cut-off scores on three aptitudes.
- Machinist - On three of the five relevant subtests, the YOJT participants reached the cut-off scores for entry into training.
- Air Conditioning - Five subtests of the GATB are seen as relevant for this trade. They reached criterion cut-off scores on two subtests.
- Drafting - All GATB subtests are seen as relevant for this trade. On five of the nine aptitudes measured, they reached the cut-off score.
- Masonry - Four of the seven relevant subtest means reached criterion cut-off for the masonry training.
- Dry Cleaning - Four of the GATB subtests are seen as relevant for this trade. The mean subtest scores reached criterion for all relevant aptitudes.
- Cabinet Maker - Of the four subtests seen as relevant for this trade, two subtest means reached criterion.

Thus, within one standard deviation, at least half of the cut-off scores for each of the trades were reached by the sample participant. Indeed, for dry cleaning, the cut-off scores for all four subtests were reached by the average participant.

In terms of aptitudes, participants did best on Manual Dexterity and General Intelligence.

Table 2. Age and Educational Attainment of Participants, since January, 1981. (Data based on 25% sample.)

<u>Age</u>	<u>Percent</u>	<u>Cumulative Percent</u>
17	6.5	6.5
18	1.6	8.1
19	6.5	14.6
20	4.9	19.5
21	3.2	22.7
22	6.5	29.2
23	3.2	32.4
24	22.9	55.3
25	6.5	61.8
26	3.2	65.0
27	8.1	73.1
28	0	73.1
29	0	73.1
30	16.3	89.4
31	9.8	100.0
	<u>100</u>	

<u>Educational Attainment</u>	<u>Percent</u>	<u>Cumulative Percent</u>
Grade 6	8.1	8.1
Grade 7	8.1	16.2
Grade 8	9.8	26.0
Grade 9	18.0	44.0
Grade 10	18.0	62.0
Grade 11	8.1	70.1
Grade 12	27.8	97.9
Grade 13	0	97.9
Grade 14	0	97.9
Grade 15	0	97.9
Grade 16	1.6	100
	<u>100</u>	

Table 3. Students Placed In Training Between January and November 1981.

<u>Vocational Area</u>	<u>Number</u>	<u>Percent</u>
Masonry	4	3.4
Mechanic	40	34.1
Electricity	12	10.2
Laundry	30	25.6
Upholstery	4	3.4
Carpentry	12	10.2
Electronics	15	10.2
	<u>117</u>	<u>100%</u>

	<u>Number</u>
Participants Tested	265
Participants in Orientation (September 1981)	52
Participants in Orientation, Placed in Industry	22
(As of November 15, 1981)	

4. Review of Logical Framework

The logical framework for this project was prepared July 23, 1979. This review aims to highlight possible changes in the framework based on current conditions of Liberia.

The goal, purpose, and outputs of the project delineated in the logical framework and described in the preceding sections of this report are unchanged. The means of verifiable indicators are also unchanged. However, the objectively verifiable indicators, the important assumptions and outputs in the project design have changed. Following is a discussion of these changes and the underlying causation:

Objectively Verifiable Indicators/EOPS and Related Important Assumptions

- (1) - NYSC with capability to effectively plan and supervise up to 500 trainees annually.

Discussion: Before Mr. Butcher, PSI long-term adviser arrived, the Government of Liberia had spent an estimated \$70,000 on salaries. Exhibit E summarizes project inputs from GOL and US AID/PSI. As can be seen from this exhibit, the inputs required to meet the target of 500 trainees annually are present. GOL and US AID have both met their obligations.

Because of the nature of the project design, it is highly unlikely that the project will train 500 participants a year. The project design is based on on-the-job training. Participants are pretested, selected, oriented in three days, then placed in industries commensurate with their interests and aptitudes.

Access to training is dependent upon the availability of industrial positions. Presently, fewer industries than originally contemplated are able to pay the stipends and to assume the responsibility for training the participants. Thus, fewer participants have access to training.

The Liberian economy suffers from financial difficulties attributable to several factors:

First, the current government inherited a debt burden which began in Fiscal 1978, when the previous government borrowed heavily to finance development projects, including the OAU meeting.

Second, the GOL receipts were lower than anticipated since 1978 due to worldwide decline in iron ore prices. (Iron ore is a major GOL export).

Third, investor confidence has suffered because of the April, 1979 "rice riots" in Monrovia and the May, 1980 revolution.

Fourth, flight of dollars and investment from the country since the April, 1980 revolution have created liquidity problems which not only limit cash reserves and investment capital, but also reduce the number of industries.

Fifth, the estimated FY 1982 GOL budget for development expenditures (July 1, 1981-June 30, 1982), will be almost 100% externally financed. The estimated deficit is \$163.1 million for this time period, of which \$40.2 million is unfinanced debt.

Sixth, the reduced number of industries located in Monrovia able to participate in the various National Commission on Youth and Sports vocational training programs has led to increased competition among those programs for O-J-T or apprenticeship slots. (See Annex F list of NCYS vocational programs).

As a result of these factors, the YOJT program has been able to place 132 participants since January, 1981, including 45 since July 1981. In order to meet the targets of 500 trainees annually, the project would have to place in training 41 participants each month. In light of the factors discussed above, this is unrealistic. A more realistic target for the number of trainees annually is about 200 (or 16 per month).

(2) - Increased numbers of employers participating effectively in the YOJT Program.

Discussion: The severe economic conditions in Monrovia have forced the closing of many businesses which had been targeted for participation in the YOJT Program. Originally, there were approximately 250 companies in Monrovia which were considered potential industries for the YOJT Program. Between 1972 and 1980, approximately 82 industries actually participated in the program. Since that time only about 40 industries are considered viable candidates for the program. That number is expected to increase as investor confidence returns and businesses reopen.

Assuming an availability pool of 40 industries, and given the original target of 500 participants annually, the YOJT must place 12.5 trainees in each industry. Since the participating industries must pay a stipend of at least \$40 per month to each trainee, the cost to employers would be prohibitively high for many of them. (The direct cost would equal \$6,000 annually for each employer).

Assuming an availability pool of 40 industries and the revised target of 200 participants annually, the YOJT must place 5 trainees in each industry. The direct cost to employers for stipends would equal \$2,400 annually.

(3) - 1,100 trainees will complete training and 75 percent will enter the work force.

Discussion: The previous discussion concluded that 200 trainees annually (or 400 trainees by the end of the two-year project) is a more realistic figure. In terms of entry into the labor force after training, the informal observations of trainee employment, between 1972 and 1980, suggest that over 75 percent do enter the work force. (Exhibit G summarizes the interim evaluation of employer training.)

(4) - NYSC with capability to backstop other vocational training programs in its portfolio.

Discussion: YOJT program has begun to provide its services to the other vocational programs in the Commission. In addition, YOJT has held an orientation meeting with the other program directors to share its policies, programs, and practices. Of special interest has been the introduction of the General

Aptitude Test Battery and the project-made nonverbal Basic Skills Test.

(5) - Re-education in unemployment of semi-skilled workers in Monrovia.

No changes indicated.

Outputs

(1) - Trained Staff

Discussion: The project design includes an assistant director and a counselor. The assistant director is unfunded for Fiscal 1982. The counselor position was vacated when the counselor was promoted to director. The position will be filled shortly. All other staff is on board in addition to paraprofessional staff funded through other GOL funds. (See Exhibit F).

The individual evaluation of the senior staff, including the trainers, job developer, and director by PSI indicate a high degree of craft skill. Many of the staff have worked in apprenticeship training programs elsewhere. All staff express a desire for in-service training in (a) pedagogy and (b) curriculum development. In the view of PSI, additional training in job development would be useful for the trainers, since this function has been added to their job responsibilities. (See Exhibit C for staff job descriptions).

The GOL and US AID are finalizing arrangements for two of the YOJT training supervisors to attend short-term training programs at U.S. colleges. The training supervisors will enroll in vocational education courses. The assumption is

that following U.S. training, the staff will return to the YOJT program. To avoid possible brain drain, the staff receiving U.S. training have been asked for a one-year commitment to remain with the YOJT program.

The long range problem for the YOJT program is the institutionalization of the technology, transferred by the long-term resident advisor. To accomplish this, there must be a stable core of committed, well-trained staff. To retain the staff, consideration should be given to a staff incentive program.

(2) - Policies and Procedures

Exhibit D includes the policies and procedures developed and installed as a part of this contract. The administrative system is developed. Project support to the industries is the next step.

Two problems have emerged:

First, industry labor standards are needed in order to certify trainees as meeting entry level requirements in their craft. Under the contract, PSI will assist the GOL in developing competency standards. At present, employers certify trainees as competent based on their views of how the trainee performed in their industries. To insure objectivity in certification, labor standards are needed.

Labor standards measure productivity and quality. To be considered competent for employment in an area, the trainee must operate with 50-75% of the standard.

By revitalizing the National Advisory Council on Education and Training, the GOL may continue its work on labor standards. If so, this would greatly facilitate the institutionalization of an objective evaluation system for all vocational training programs.

Second, follow-up and evaluations are needed of trainees placed in industries between 1972 and 1980. During this period, between 400 to 600 youths were placed as trainees in private industries. Records on their placement and progress are sketchy. The long-term advisor has assisted the YOJT staff in locating at least 100 of these trainees. Some have been in trainee positions in the same industry, since the program began.

The follow-up problem is difficult. There was no pre-testing to determine aptitude in a vocational area. If training is allowed to continue indefinitely, the trainees without aptitude in an area will never earn a certificate of completion. The policy problem is how to maintain good faith with these trainees.

Another follow-up problem which the project inherited is the nature of the training received in the industry. Of some concern to YOJT staff is the assurance that the employers will train the youths to operate all of the equipment. However, for employers this may be less economical than allowing the trainee with an aptitude for a particular machine, to work on it exclusively. The policy problem is what economic incentives are needed to insure that trainees learn to use all of the equipment in an industry.

In its second year of operation, the YOJT staff with assistance from the long-term advisor will address these issues more fully.

(3) - Training Programs

Training is offered in four vocational areas, as specified in the logical framework: mechanics, electricity, building construction, carpentry/joinery, and general trades. Between 1972 and 1980, the training program did not have a fixed length. One stayed until training was completed. In 1981, the training program was limited to 18 months. All trainees entering the YOJT Program after July 1981, we advised of this in orientation. Since July 1981, all trainees are pretested using the General Aptitude Test Battery to determine the vocational areas for which they were best suited.

The training program, as originally designed, was limited to on-the-job training in a vocational area. However, the low level of mastery of reading and math indicates a need to supplement OJT with basic skills instruction.

A review of educational statistics for 1978 reveals that Liberia has a literacy rate of 30%. Indeed, only 31% of the total school age population was enrolled in school in 1978, according to GOL-published data. In addition, only 16% of the high school age population was enrolled in high school.

The goal of the YOJT Program has always been to reach the school leavers and under-educated youths. Because of their lack of math and reading skills, the YOJT training program

faces a problem. In order for the youths to function as employed adults, many will need training to strengthen their reading and math skills. This training should be embedded in the vocational training program, so that the trainees will see the relevance and practical benefits of the training.

(4) - Training Materials

Exhibit H includes the project training materials. All training supervisors participated in in-service training to develop learning activity packages, using slides. These materials are used in orientation programs for new trainees.

The training materials developed by the YOJT Program, in particular the slides, have attracted the interest of other Commission vocational training programs.

The YOJT Program training materials and the capacity to develop them for others are potential revenue-generating sources for the YOJT Program.

5. Evaluation of YOJT Program Staff

As a part of this evaluation, structured interviews were conducted with all project staff individually. Each interview lasted about 30 minutes. The interview guide and the answers follow:

(1) What is your schooling?

<u>Number</u>	<u>Highest Educational Attainment</u>
1	Below high school
-	High school graduation only
-	Post-secondary:
	One Certificate
4	Two-or more certificates
1	One to three years college
<u>1</u>	Four or more years college
7	Total Interviewed

(2) What previous teaching experience have you had?

<u>Number</u>	<u>Teaching Experience</u>
2	No teaching experience
-	Less than 1 year
2	One to three years
<u>2</u>	Over four years
6	Total Interviewed

(3) What industrial experience have you had?

<u>Number</u>	<u>Industrial Experience</u>
1	None
-	Less than one year
-	One to three years
<u>5</u>	Over four years
6	Total Interviewed

(4) How many trainees do you supervise? And, how long have you been in the YOJT Program?

<u>Number</u>	<u>Number of Trainees</u>
1	None
-	One to ten
2	Eleven to twenty
<u>2</u>	Over twenty
5	Total Interviewed

<u>Number</u>	<u>Length of Time in YOJT</u>
1	Less than one year
3	One to two years
2	Three to five years
0	Over five years
<u>6</u>	Total Interviewed

- (5) How do you supervise the trainees? Average number of visits each week?

<u>Number</u>	<u>Method of Supervision</u>
5	Site visits (weekly)
5	Trainee interviews
5	Employer interviews

<u>Number</u>	<u>Average No. Weekly Visits</u>
-	None or emergencies only
1	Once weekly to each site
2	Twice weekly to each site
-	More than twice
<u>3</u>	Total Interviewed

- (6) Since October 15, how many industries have you visited for job development?

<u>Number</u>	<u>Weekly Average</u>
-	None
2	One to five
2	Six to ten
1	Over ten
<u>5</u>	Total Interviewed

<u>Number</u>	<u>Hours/Week on Job Development</u>
1	None
2	One to eight
2	Eight to sixteen
2	Seventeen to twenty-four
-	Over twenty-five
<u>5</u>	Total Interviewed

Summary

This section summarizes YOJT staff data. There are 5 professional trainers and a project director. The counselor position vacated when the counselor was promoted to director, is to be filled by the end of November, 1981. The staff, including the director, have completed high school with post-secondary training. The only exception is one staff member without a high school diploma. All staff have over 10 years experience in their craft. Several have significant vocational teaching experience and participation in similar on-the-job training programs.

The YOJT staff are all journeymen with extensive experience in their craft. Some have had teacher training experience, primarily in industry. Two common weaknesses among staff are training in education supervision and curriculum development. Common strengths are their desire to improve on the job and to measure their effectiveness in terms of trainee output.

The YOJT staff operate as a fairly cohesive group. There is mutual problem-solving in daily operations. The staff has integrated the procedure and policies developed under this contract into their operations with ease.

The long-term resident advisor enjoys a warm, open relationship with the YOJT staff. This rapport has contributed significantly to the ease with which new technologies are being transferred and institutionalized in the YOJT Program.

As can be seen above, the staff activities include a significant amount of time on job development, that is, locating industry training slots in the skilled trades. This responsibility was added to the YOJT trainer responsibilities after the project lost the services of the job developer in October.

The analysis highlights several project needs: (a) the need to upgrade the senior level vocational education training of project professional staff; and (b) the need for staff development workshops in job development.

Both needs have been addressed in the staff in-service training. However, as staff becomes more highly skilled, they will be offered other positions to fill those vacated by Liberians who did not return after the 1980 revolution. The policy problem for the project will be how to retain its highly trained staff for the length of the project and in subsequent years. To address this problem, the COP has recommended, and both GOL and US AID have accepted, the requirement that all YOJT staff trained outside Liberia, must serve for one year with the project, after training.

6. Conclusions and Recommendations

Conclusions

The Interim Project Evaluation was undertaken in order to assess the progress made in the project to date and to identify barriers (if any) to successful completion of the project. Of central importance was consideration of whether the project outputs were being institutionalized by the permanent GOL YOJT Program staff.

In the preceding sections of this report, we have described the YOJT Program, reviewed PSI activities, delineated relevant project statistics, analyzed the logical framework, and evaluated YOJT Program staff. In the exhibits appended to this report, we have reviewed the life of project plans, the YOJT job descriptions, administrative procedures developed, overall project inputs, employer participation, and project training materials.

In this section, we shall briefly restate the conclusions from the evaluation embedded in the report.

● Testing

We believe the test results do indicate a need for an additional input to assist low achievers and the near illiterates to prepare for aptitude testing. This may involve classes in basic skills of reading and word comprehension as well as development of elementary mathematics skills. Additionally, some type of pre-training remedial work should be instituted to help

trainees prepare for the rapid pace of industrial instruction.

Private sector participation

Training facilities under the cooperative efforts between industrial concerns and the Center represent the fundamental method of meeting the objectives of the YOJT project. When the project was first developed, there were many industrial establishments indicating their willingness to participate in the program. As a result of the political changes, many establishments have closed, cut back their operations or withdrawn from involvement in the program. There are indications that, given an upturn in the economy, there will be a renewed involvement as more industries return or expand their operations.

Based on the constraints, the availability of sufficient slots for training is greatly reduced. Recently some industries have indicated their willingness to assist in training if stipends are available from outside sources. The possibility of such an arrangement for outside stipends is not promising, but this has been the experience in isolated cases.

Competition with other OJT Programs

There is one universal problem in soliciting slots. The thrust for most vocational training centers is the use of some type of OJT as culmination of training, even for programs which have shop/laboratory experiences prior to the OJT experiences. This thrust causes most training

centers to canvas the same industries for assistance in making slots available.

YOJT Staff Responsibilities Expanded

An innovative approach has developed in securing slots. Several individuals including some who have been through orientation, have used their personal contacts in soliciting slots for themselves. The Center has used this in that when a technical specialist is dispatched to verify the opening, he invariably attempts to get other slots. This proves profitable often. It may prove valuable to suggest this involvement utilizing personal contacts by prospective trainees.

Recommendations

- 1) Reduce the trainee goal to 200 annually, or 400 for the two-year contract period.
(Note: This was discussed extensively with US AID/Liberia and the GOL; both institutions concur).
- 2) Introduce a basic skills training component into the training, to increase literacy and elementary arithmetic skills.
(Note: This was discussed extensively with US AID/Liberia and the GOL; both institutions concur as to the need. The PSI long-term advisor will pursue program options with both parties.) Among the options to be considered are:
 - a) Extending pre-placement orientation to include basic skills instruction, using adult basic vocational education curriculum;
 - b) Adding post-placement basic skills instruction after OJT has ended;
 - c) Mixing OJT and basic skills training. (Where feasible, the YOJT staff encourages trainees to go to night school to acquire basic skills needed).
- 3) Consider staff incentive program to reduce likely recruitment of YOJT staff by other GOL programs.
(Note: This was discussed with GOL, which is cognizant of the potential problem. The PSI long-term advisor will assist GOL as it considers this problem).
- 4) Utilize industrial job standards developed by GOL in developing performance standards for trainees' certification

(Note: This was discussed with GOL. The job standards required have not as yet been developed. This may create a reconsideration of the performance standards to be used, at a later date).

- 5) Develop the revenue-generating capacity of YOJT Program as a supplemental source of program funds. This is a long range goal, which would enable the YOJT Program to become more financially independent. The YOJT Program may eventually be able to raise revenue through one or more of the following means:

- a) Selling YOJT services, such as curriculum development, photography, aptitude testing;
- b) Receiving stipends from industries to support trainees in selected vocational areas;
- c) Creating a mobile training unit operating on a fee basis outside of Monrovia;
- d) Providing in-service training on a fee basis to employers wishing to upgrade staff skills.

(Note: The concept of developing the revenue-generating capacity of YOJT Program was discussed with US AID/Liberia and GOL. The concept requires feasibility testing).

- 6) Consider the following changes in the vocational training program in Year 2 of the project or later.

(Note: These suggestions have been discussed in general with US AID/Liberia and GOL. They are included here to stimulate further discussion and consideration):

- a) Some concerted effort is needed to assist trainers in understanding the programming of special skills to be acquired.

In some few cases, individuals have been assigned one area, and if they showed skill development in that area, the individuals were kept in this area - a profit to the industry - rather than have the privilege of moving to the various areas of the shop.

- b) The establishment of a vocational advisory committee is an urgent need. This will get even more support as soon as the National Vocational Advisory Council is re-established.

This committee will help in revamping/organizing industrial training to a more dependable, professional stance.

- c) Technical training units should be more closely associated for the exchange of views, sharing experiences and sharing resources and competencies,

There is a move in this direction with the assignment of an Assistant Director General for Vocational Technical Affairs. A planned seminar should help in structuring this close association.

- d) The Center needs a facility to have the technical instructors more closely associated in training. The current development of Learning Activity Packages (LAP's) may help for instructors may bring the

trainees under their monitorship to this facility for related, re-enforced technical materials.

e) Some efforts are needed in helping trainees to begin considering opening their own businesses on a personal basis or as a co-operative, i.e., small enterprise development. Many trainees are employed as regular employees of the training institution. If the matter of small business development is encouraged and supported by Government, some broad based economic expansion may evolve.

f) The data collection instruments need to be revised so that daily tallies may be easily tabulated.

Recent efforts for collecting data have brought to light many instances of early trainees having been in the program for extended periods of time. Routine monitoring and progress reporting in a timely manner will give statistics which may help in stimulating the quality of training.

g) Efforts are being made to encourage governmental agencies to open slots for training.

This may involve LPMC, LPRC, The Port, etc.

This part of the results of the preliminary interim evaluation indicates that there is much to be accomplished and that special efforts by the Center with the involvement of GOL, US AID, with PSI backstopping, will help to increase the chances for accomplishing the project goals.

EXHIBIT A

Original Life of Project Plan

ON-THE-JOB-TRAINING TASK SCHEDULING

YEAR	1981												1982												
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	
MONTH																									
TASK #1																									
LIFE OF PROJECT PLAN					*																				
REVIEW TASKS						Evaluate for Achievement																			
REVISE TASKS						*Upgrade Revised Tasks																			
ACTION PLAN		Adm.		*	Staff Dev.		Project Monitoring																		
ORIENTATION			*							*															
1. Staff		General			Tasks Listings			In-Service Training																	
STUDENT ORIENTATION				* Testing, Screening, Orientation, Placement, Monitoring																					
INFORMATION RETRIEVAL	*	*	*			Visits to Trainers - Information from Students - Monitoring Training																			
LOGISTICS FOR CONSULTANTS		Prepare Specialists			*	Consultant on Site						R & R	ADVISOR				*	Consultants							
CANVAS INDUSTRY		Visits to solicit slots										Monitor Training													
REVIEW PLAN		Directors & Asst. Minister										Update Plan													
USE & USAGE		Ed. & Project Officers								*		Update Plan													
EVALUATION	*	*	*							*		Advisory Board	* USAID TEAM *						*						
REVE		Concept Intro.			*	* Health Labs							*	* Report to Advisory Board											
STATISTICAL REPORT				*	Initial			*	Revised				13 Month Report		18 Month Report										
CREATE ADVISORY COUNCIL		Form Committee																	*						
		*			1st Mtg					*	2nd Mtg			*	3 Mtg		4th		5th		*	6th			

ON-THE-JOB-TRAINING TASK SCHEDULING

	1981												1982											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
TASK #2																								
TOP JOB DESCRIPTIONS		*	*								*													
		For all Adm & Tech. Staff				For all Support Staff				Revise and Review														
EVALUATION						*					*							*						
					First Evaluation				Second Evaluation				Third Evaluation											
COMPARE WITH PRESENT		*																						
		Compare Present Function																						
COMPARE WITH INDUSTRY		*									*			*	*			*						
		Check Assigned Duties and Revise				Review Staff Evaluation				Review Staff Evaluation				Review Staff Evaluation				Report Budget						

Best Available Document

ON-THE-JOB-TRAINING TASK SCHEDULING

YEAR	1981																							
	1												2											
MONTH	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
TASK #4																								
ORGAN. ADM. & PROCEDURES																								
a. REVIEW EXT. POLICIES		*	*																					
		Eva. Current Policies																						
b. DEMST. IMPL. PROCEDURES		*	*																					
		Prepare Suggested Procedure for new Organ.																						
DEV. W/SHOPS		*	*	*	*																			
		Staff Orient.	In-Service Training	Workshops Mat. Development																				
ADVISORY COMMITTEE		*	*	*	*																			
		Form Commit	First Meet.	Second Meeting																				
CONTACTS WITH FIRMS		*	*	*	*																			
		Intr. Letter to Industries Training by T/Specialists																						
REPORTS TO MOBILIZE INDUSTRY		*	*	*	*																			
		Letters to Industry Soliciting Slots for Training																						
WORKSHOPS FOR TRAINERS IN FIRMS			*	*	*	*	*	*	*	*	*	*												
			Int. W/Shops on Job Tasks																					
VISITATIONS TO SITES		*	*	*	*	*	*	*	*	*	*	*												
		Visits to sites by Advisor, Counselor, Job Developer, Trainers, Specialists																						
DEVELOP RECORDS OF PAST AND FUTURE EMPLOYERS		*	*	*	*	*	*	*	*	*	*	*												
		Complete Survey of all Trainers/Trainees																						

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ON-THE-JOB-TRAINING TASK SCHEDULING

YEAR MONTH TASK # 7	1981												1982										
	1												2										
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
DEVELOP SYSTEM FOR TRAINING AND SUPERV. OF TRAINEES																							
EFFECTIVE APT. TESTS			*																				
				Begin Testing & Profile Development									(West African (GATT Non-verbal)										
WORKSHOPS FOR TR. PERSONNEL			*																				
				Special Workshops for Employers Introduce Competency Based Instruction																			
LIAISON WITH EMPL/TRAINERS		*	*	*	*	*	*																
			Visits to Employers. A Program to solicit new training site																				
FOLLOW-UP OF TRAINEES	*	*	*						*	*	*												
	Follow-up of Trainers Already in Program								Special follow-up of all trainees														
LECTURES AND DEMONSTRATIONS FOR EMPLOYERS			*																				
			Film showing to employers																				
TECHNICAL ASST. TO EMPL.			*	*	*																		
			Conferences with employers on material development in special areas																				
RECORD KEEPING	*	*																					
	Staff Development on record keeping, Filing, etc.																						

(5)

ON-THE-JOB-TRAINING TASK SCHEDULING

YEAR MONTH TASK # 8	1981												1982														
	1												2														
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12			
1.	DESIGN SYSTEM TO MEASURE SKILLS																										
2.			*	*																				Trade Instructors Prepare Subskills Listings		Trade Instructors Prepare Subtasks Listings	
3.				*	*																			Employers and Trade Instructors Prepare Criteria for Standards			
4.						*																		Organize Major skills in order of Instruction			
5.												*	*											Begin Trade Testing for Competency			
6.									x	*	*	*												Interview Trainers and Trainees to Evaluate Training			
7.				*	*																			Interview trainees who have completed training			
8.				*	*																			Interview trainers to evaluate system of training			
9.						*						*												Interview employers to assess competency of employees trained in program			

54

YEAR
MONTH

1981

1

2

1982

TASK #10

PROVIDE PROFESSIONAL ADVISORY SERVICES IN AREA OF APRENTICESHIP TRAINING

A. IDENTIFY SOURCES OF MATERIALS & INFORMATION ON TRAINING NEEDS.

B. PROVIDE FIELD STAFF VISITS TO LIBERIAN TR. PROGRAMS.

C. ORGANIZE TR. PROGRAMS & WORKSHOPS.

D. REVIEW CURRICULUM AND TEACHING AIDS USED IN V/TRAINING

1												2											
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
			*		*																		
			Sessions with Apprenticeship Council Review data and proposals in Apprenticeship Training; Survey Materials on Training Needs Consult with other training teams																				
		*		*	*																		
		Staff visits to other Training Units: LOIC, MVTC, NYTC, Domestic & Clerical, B.W.I. etc.																					
					*																		
			Workshops Subjects: Begin and Continue for Staff Trainings; Task Analysis, Learning Activity, Packages, Counseling, Monitoring, Film Processing, Public Relations, Organization and Administration																				
					*																		
		Review Off-The-Shelf Materials in Technical Training Order some prepared Instructional Packages Prepare some visuals for instructional purposes																					

ON-THE-JOB-TRAINING TASK SCHEDULING

YEAR
MONTH
TASK #11

	1981												1982										
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	
PROVIDE A LEVEL OF SELF-SUFF. IN BACKSTOPPING AND SUPPORT FOR ALL CONTRAC. PERSONNEL.																							
a. TRAVEL AND LAND ARRANG.			*																				
			Advise PSI on situation of short-term consultants for June, July and August																				
b. MONITOR ALL COMMODITY ORDERS, SHIP. AND DELIV.			*																				
			Prepare documents for Duty Free Entry Receive and Process all shipment documents Deliver to assigned building																				
c. DESIGN AND OPERATE SHORT-TERM TRAINING			*																				
			Design deliverables for Short-term consultants																				
d. SALARY INTRUC. SUPPORT			*																				
			Work with PSI in determining salary and support for short-term consultants																				
e. MONITOR PREP. OF DUTY-FREE PAPERS			*																				
			Check with GSA on all items shipped																				
f. INVENTORY OF ALL RECEIVED			*																				
			Prepare inventory forms for materials and equipment																				

15

YEAR
MONTH

	1981												1982											
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
TASK #12																								
DESIGN PROCEDURES INCREASE PARTICIPATION OF WOMEN YOUTH																								
REVIEW PAST PARTIC. OF FEMILES			*																					
IDENTIFY BARRIERS			*																					
MEET WITH F/GRADUATES			*																					
REVIEW RECRT. PLAN TO ASSESS SPECIAL ATTN.			*																					
INSTITUTE DATA COLLECTION TO MEAS. PARTICIPATION			*	*																				
DESIGN INFM. SYSTEM TO SELECT COMMT. F/TRAINEES			*	*	*																			

* Review statistical data on women participants Survey industries where women were training - Study implications

* Interview industries where women were trained to assess problems or attributes in training women - On-going

* Discuss training with women currently in training Record impressions

* Begin Public Relations to Attract women On-going

* * * Canvas industries to solicit training slots for women in traditional and non-traditional areas

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EXHIBIT B

Revised Life of Project Plan

1981

1981

- a. LIFE OF PROJECT PLAN
- b. REVIEW TASKS
- c. REVISE TASKS
- d. ACTION PLAN
- e. ORIENTATION
1. Staff
- f. STUDENT ORIENTATION
- g. INFORMATION RETRIEVAL
- h. LOGISTICS FOR CONSULTANTS
- i. CANVAS INDUS.
- j. REVIEW PLAN
GOL & USAID
- k. EVALUATION
- l. CBVE
- m. STATISTICAL REPORT
- n. CREATE
- o. ADVISORY COUNCIL

	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	
					Evaluate for Achievement															
					Upgrade Revised Tasks															
	Adm.			Staff Dev.		Project Monitoring														
	General, Tasks Listings				In-Service Training															
			Testing, Screening, Orientation, Placement, Monitoring																	
	Visits to Trainers - Information from Students - Monitoring Training																			
		Prepare Specialists			Consultant on Site					R & R ADVISOR				Consultants						
	Visits to solicit slots Monitor Training																			
		Directors & Asst. Minister						Update Plan												
		Ed. & Project Officers						Update Plan												
								Advisory Board		USAID TEAM										
		Concept Intro.			Begin LAPS					Report to Advisory Board										
		Initial			Revised				18 Month Report		18 Month Report									
		Form Committee																		

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ON-TH -JOB-TRAINING TASK SCHEDULING

(REV) 26/81

YEAR

MONTH

TASK # 2

DEVELOP JOB DESCRIPTIONS

STAFF EVALUATION

CRITIQUE WITH STAFF

CRITIQUE WITH MINISTRY

1981		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
	*	*	*									*													
	For all	For all	Adm. & Support	Tech. Staff							Revise and Review														
						*						*								*					
						First Evaluation							Second Evaluation							Third Evaluation					
		*						*																	
			Compare Present Function																						
	*											*			*				*						
		Check Assigned Duties and Revise										Review Staff Evaluation							Review staff Evaluation						
																				Reviewed Staff Evaluation					

6

ON-THE-JOB-TRAINING TASK SCHEDULING

CPY 10/26/81

YEAR
MONTH

TASK # 3

SELECTION OF
SUPERVISORS
AND
COUNSELOR

SUPPORT STAFF

TRAINEE SELEC-
TION & PLACEMENT

1981																							
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
										*													
									Selection of Counselor														
	*																						
	Most Support in Place																						
										*													
			Screen applications for Director.																				
										*													
								Appoint Director															
						*	*	*	*	*													
			Trained Testing				Continue regularly (WAE, GATB, Non Verbal)																
						*	*	*	*	*													
			Trainee Interviews & Selections																				
						*	*	*	*	*													
			Trainee Placement & Orientation																				

ON-THE-JOB TRAINING TASK SCHEDULING

(REVISED)
10/26/81

YEAR
MONTH

1981		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
TASK # 4 ORGAN, ADM. & SUP. PROCEDURES	a. REVIEW EXT. POLICIES	Eva. Current Policies																							
	b. DEMST. IMPL. PROCEDURES				*	*					*	*													
	c. DEV. W/SHOPS	Staff Orient														*	*								
		In-Service Training																		*	*				
	ADVISORY COMMITTEE	Workshops Development								*															
		Form Committee									*														
	CONTACTS WITH FIRMS	Instr. Letter to Industries Training by T/Specialists				*	*																		
		Letters to Industry Soliciting Slots for Training			*				*	*	*	*													
	REPORTS TO MANAGER PR/SECTOR	Int. W/Shops on Job Tasks				*	*																		
		Visits to sites by Advisor, Counselor, Job Developer, Trade Specialists			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	WORKSHOPS FOR TRAINERS IN FIRMS	Inst. Mat. Dev.																							
		Mini-Workshops																							
VISITATIONS TO SITES	Second Meeting														*	*									
	Survey of all Trainers/Trainees			*	*	*	*	*	*	*	*														

TASK # 4
ORGAN, ADM. & SUP.
PROCEDURES

a. REVIEW EXT. POLICIES

b. DEMST. IMPL. PROCEDURES

c. DEV. W/SHOPS

ADVISORY COMMITTEE

CONTACTS WITH FIRMS

REPORTS TO MANAGER PR/SECTOR

WORKSHOPS FOR TRAINERS IN FIRMS

VISITATIONS TO SITES

DEVELOP. ROSTERS OF PAST AND P/EMPLOYERS

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ON-JOB TRAINING TASK SCHEDULING

CRV 10/26/81

YEAR
MONTH

1981		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
TASK # 5	PREPARE TRAINING PROGRAM			*	*	*																			
	ORGANIZE TASKS LIST AND DETAIL			Instructors Pre J/Tasks																					
b.	IN-SERVICE ON TASKS			*	*	*																			
				In-Service Training Task Analyses																					
c.	IN-SERVICE OBJECT					*																			
				In-Service Performance Obj																					
d.	COMPARE FORMAT USED IN IND.			*			*		*																
				Study and Revise Industry's Training																					
e.	BEGIN DEV. OF INST. MATERIALS					*	*	*																	
						INSTRUCTIONAL MATERIAL DEV. Consultants																			
f.	IN-SERVICE FOR TRAINERS									*															
				Workshops for Industrial Trainers																					
g.	CRITIQUE WITH APP. COMM. BEGIN MINI-WORKSHOPS							*																	
						Mini-Workshops with Instructors																			
h.	IN-SERVICE ON TAPS (CBVE)																								
						JAP Development with Consultants																			
i.	TRAINING IN GRAPHICS INCL. PHOT.					*	*	*																	
						Special Photography Workshop																			
k.	DEV. BROCH											*	*												
				Prepare a description brochure																					
l.	BEGIN DEV. INST. MAT.			*	*	*				*	*	*													
				Preliminary Inst. Mat. Dev.																					
m.	PREP. P/MAT.																								
						Continue with Graphics Dev.																			
n.	PACK DEV. FOR ORIENT.										*	*													
						Begin Final Preparation of Print Materials																			
o.	ORDER SUP & EQUIP.																								
						Trainee Or. Pack. Dev.																			

YEAR

1981

10/27/81

MONTH

1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12

TASK #7

DEVELOP SYSTEM FOR TESTING AND SUPERVISING TRAINEES

a. EFFECTIVE APT. TESTS

*

Begin Testing & Profile Development (West AFRICAN) (GATT Non-Verbal)

b. WORKSHOPS FOR TR. PERSONNEL

* *

Special Workshops for Employers Introduce Competency Based on Instruction

c. LIAISON WITH EMPLOYERS/TRAINERS

* * * * * * * * * *

Visits to Employers. A Program to solicit new training sites

d. FOLLOW-UP TRAINEES

* * * * * & * * * *

Follow-up of Trainers Already in Program Special follow-up of all trainees

e. LECTURES AND DEMONSTRATIONS FOR EMPLOYERS

Film showing to employers

f. TECHNICAL ASST. TO EMPL.

* * * *

Conference with employers on material development in special areas

g. RECORD KEEPING

* * * *

Staff Development on Record Keeping Filing, etc,

21

YEAR
MONTH

TASK # 8

DESIGN SYSTEM TO
MEASURE SKILLS

a. DEVELOP LIST
OF S/SKILLS
& S/TASKS

b. DETERMINE
PERF. STAND.

c. TAXONOMY OF
MAJOR SKILLS

d. COMPETENCY
TEST

e. POST TRAINING
EVALUATION

f. INTERVIEWS
W/ GRAD.

g. INTERVIEWS
WITH TRAINERS

h. INTERVIEWS WITH
EMPL.

1981	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	
			*	*	*	*	*													
			Trade Instructors Prepare Subskills Listings Prepare Subtasks Listings																	
				*	*				*	*										
			Employers and Trade Instructors Prepare Criteria for Standards																	
						*				*	*									
						Organize Major Skills in order of Instruction														
													*	*						
									Begin Trade Testing for Competency											
									*	*	*	*								
									Interview Trainers and Trainees to Evaluate Training											
				*	*			*	*											
				Interview trainees who have completed training																
				*	*	*														
				Interview trainers to evaluate system of training																
					*				*											
				Interview employers to assess competency of employees trained in program																

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ON-THE-JOB-TRAINING TASK SCHEDULING (REVISED)

YEAR
MONTH

1981

TASK # 9

ASSIST COL IN
DESIGN AND IMPL.
OF PARTICIPANT
TRAINING PROGRAM

IN-SERVICE
TRAINING/PROGRAM
W/SHOPS, SEMINARS

FIELD TRIPS TO
U.S. OR THIRD
COUNTRIES TO
OBSERVE V. TR. PR.

IN-SERVICE
TRAINING IN
TESTING COUNSELING
& SUPERVISION

IN-SERVICE
TRAINING FOR
CLERICAL AND
SUPPORT STAFF

1981																					
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7			
		*				*	*									*	*				
		Begin In-Service Orientation for Staff					Workshops in Film Processing LAP Development								Seminars Developing Training Program						
												*	*	*	*	*	*				
								Possible Short-term trips to other countries to observe CJT Vocational Technical Training in Operation													
		*				*	*	*													
		Special Workshops in Testing and Supervision Development of Aptitude Profiles																			
		*	*	*	*	*	*	*	*	*											
		Special Sessions with Clerical and Support Staff to Improve Efficiency																			

DATE
30 11 82

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ON-THE-JOB TRAINING TASK SCHEDULING

10/27/81

YEAR
MONTH

1981																		
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7
TASK # 10 PROVIDE PROFESSIONAL ADVISORY SERVICES IN AREA OF APPRENTICESHIP TRAINING				*	*				*	*		*						
				Sessions with Apprenticeship Council Review data and proposals in Apprenticeship Training; Survey Materials on Training Needs Consult with other training teams														
				*	*	*												
				Staff visits to other Training Units: LOIC, MVTC, NYTC, Domestic & Clerical, B.W.I. etc.														
c. ORGANIZE TR. PROGRAMS WORKSHOPS				*	*	*	*	*										
				WORKSHOPS SUBJECTS: Begin and Continue for Staff Training Task Analysis, Learning Activity Packages, Counseling, Monitoring, Film Processing, Public Relations, Organization and Administration														
d. REVIEW CURRI- CULUM AND TEA- CHING AIDS USED IN V/TRAINING				*	*	*	*	*										
				Review Off-The-Shelf Materials in Technical Training Order some prepared Instructional Packages Prepare some visuals for Instructional Purposes														

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ON THE JOB TRAINING TASK SCHEDULING

(REVISED 10/27/77)

YEAR

1981

MONTH

1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12

TASK # 11

PROVIDE A LEVEL OF SELF-SUFF. IN BACK STOPPING AND SUPPORT FOR ALL CONTACT PERSONNEL

a. TRAVEL AND LAND ARRANG.

* *
Advise PSI on situation of short-term consultants for June, July and August

b. MONITOR ALL COMMODITY ORDERS, SHPM. AND DELIVS.

* *
Prepare documents for Duty Free Entry
Receive and Process all shipment documents
Deliver to assigned building

c. DESIGN AND OPERATE SHORT-TERM TRAINING

*
Design deliverables for Short-term consultants

d. SALARY STRUC. SUPPORT

*
Work with PSI in determining salary and support for short-term consultants

e. MONITOR PREP. OF DUTY-FREE PAPERS

*
Check with GSO on all items shipped

f. INVENTORY OF ALL RECEIVED

*
Prepare inventory forms for materials and equipment

EXHIBIT C

YOJT Program Job Descriptions

(Under Separate Cover)

EXHIBIT D

Administrative Procedures and Forms

REVIEW OF YOUTH ON THE JOB TRAINING PROGRAM OBJECTIVES

OBJECTIVES:

- (a) to help unemployed youth to develop a saleable skill for entry into the labor market
- (b) to upgrade the skills of the technical manpower and support staff in management, operational procedures, training and monitoring the selection and orientation of trainees
- (c) to strengthen and develop a program already in existence
- (d) to assist industries in skills instruction, training program development, evaluation and supervision
- (e) to assist in the manpower development of Liberia

Trainees:

Presently, the Youth On-The-Job Training Program has 190 trainees including six women, between the ages of 14-25, who earn a monthly stipend of \$40-\$60.00, paid by industry.

Training lasts between 1 and 2 years, depending on trainees' progress.

Selecting trainees:

Trainees present formal applications to the Job Developer attached to the center. Currently, the YOJT team is using a series of aptitude test to determine areas where trainees may successfully pursue technical instruction. Counseling sessions are being held prior to assignment to an industry for training.

Supervision:

The YOJT training program is a part of the National Youth and Sports Commission. General supervision is under the Director General and the Deputy Director-General. Specific supervision is under the Assistant Director-General for Vocational and Technical Affairs.

The staff of the program consists of an Acting Director, four technical instructors, one counselor, one job developer, one counselor aide and six support staff. One American advisor is assigned to the project under a contract between USAID and PSI Associates of Washington, D. C.

Training areas:

Training is done in Industries in masonry, electricity, air conditioning/refrigeration, auto mechanics, machine shop practices,

tailoring, dry cleaning and pressing, cabinetmaking and carpentry, electronics, and general trades.

Husing:

The YOJT staff is housed at 35 Clay Street in ANNEX 3 of the National Youth and Sports Commission;

Furnishings:

Some furnishings are secured from the Government of Liberia. Others are bought by PSI Associated on the contract agreement. Equipment used in testing, training and Learning Activities Packets development is also provide under the contract agreement. Two cars are also provided under the agreement.

Short-term Consultants:

Under the agreement, two technical consultants have spent two and one-half months at the center. Their duties included training the staff in production of 35 mm slides for instructional purposes, assisting in test administration, reviewing the general progress of the project, instructing in the processes of material development, and assisting the Advisor in general administrative procedure development.

Submitted by:

Joseph E. Butcher
Chief of Party
PSI Associates, Inc.

/jec
15/9/81

YOUTH ON-THE-JOB TRAINING PROGRAM
BUREAU OF VOCATIONAL AND TECHNICAL TRAINING
NATIONAL YOUTH & SPORTS COMMISSION
35 CLAY STREET
MONROVIA, LIBERIA

SURVEY IN-TAKE FORM

MONTH DATE YEAR TELEPHONE # _____

NAME OF FIRM: _____ ADDRESS: _____

NUMBER OF TRAINees NEEDED: _____ AGE: _____ MALE: _____ FEMALE: _____ WHEN NEEDED: _____

EDUCATIONAL LEVEL: _____ SKILL AREAS IN WHICH TRAINees ARE NEEDED: _____

CARPENTRY ELECTRIC MASONRY OTHERS: _____
MONETARY SUPPLY PROVIDED TO TRAINees: _____ \$40; \$50: _____ \$80; SPECIFY _____
NAME OF FIRM: _____ NAME OF FIRM/SUPERVISOR/CONTACT PERSON: _____

OFFICER'S /INSTRUCTOR'S NAME: _____

COMMENTS: _____

WIK/jec
YOTJTP/15/10/81
MONROVIA, LIBERIA

Agreed _____

YOUTH ON-THE-JOB TRAINING PROGRAM
NATIONAL YOUTH & SPORTS COMMISSION
35 CLAY STREET
MONROVIA, LIBERIA

MONTH: _____

DAILY LOG & VISITATION

INSTRUCTORS - COUNSELORS

NAME: _____ TITLE: _____ DATE: _____

PLACE VISITED: _____ CONTACT PERSON IN INDUSTRY: _____

TRAINEES VISITED: _____

TRAINING AREA: _____

OBSERVATION AND EVALUATION: _____

TRAINEE ACTIVITY: _____

LENGTH OF VISIT: _____

TRAINEE COMMENTS: _____

TRAINER COMMENTS: _____

RECOMMENDATIONS AND SUGGESTIONS FOR IMPROVEMENT: _____

REPUBLIC OF LIBERIA
NATIONAL YOUTH & SPORTS COMMISSION
35 CLAY STREET
MONROVIA, LIBERIA

MONTH: _____

Bureau of Vocational & Technical Affairs

SCHEDULE OF ACTIVITIES

WEEK OF: _____

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

REMARKS:

SIGNATURE: _____

EXHIBIT E

YOJT Program Inputs by GOL and U.S. AID/PSI

YOUTH ON-THE-JOB TRAINING PROGRAM

STAFF

1. 1 Director
2. Counselor (has not been assigned)
3. Assistant Director (has not been assigned)
4. 4 Trade Instructors
5. 1 Typist
6. 1 Typist (has not been assigned)
7. 2 drivers
8. 2 Custodians
9. 2 Security Guards
10. 2 Messenger
11. 2 Cadets (not on our payroll)
12. 1 Advisor
13. 1 Job developer (not on our payroll)
14. 1 Asst. Counselor (not on our payroll)
15. 1 General Trades Instructor (has been appointed)

/jec

10/30/81

MONROVIA,

GOL PURCHASES

1. 1 Refrigerator
2. 15 Tables
3. 30 Chairs
4. 8 Fans
5. 1 Building - Utilities
6. General Cleaning Supplies
7. Stationery
8. Professional Chairs on order

/jec
10/30/81
MONROVIA

MATERIALS, EQUIPMENT AND SUPPLIES RECEIVED
THROUGH PSI ASSOCIATES

1. 10 Pads Text Books and Booklets
2. 28 Book I - Parts 1-4
3. 28 Book II - Parts 5-7
4. 1000 Answer Sheets
5. 10 Stencils, Hand Scoring
6. 1 Projection Screen and Cover
7. 6 Plastic Pegboards and Pegs
8. 6 Plastic Boards with metal parts for Finger Dexterity
9. 6 Plastic Covers for Finger Boards
10. 2 Electric Typewriters (Hermes 808)
11. 2 Manual Typewriters (Remington 150)
12. 1 Slide Projector - (Slide cases) Bell and Howell
13. Tape Recorder (Panasonic)
14. 1 Overhead Projector (3M)
15. 1 Transparency Maker (3M)
16. 1 Flash Unit (Metz - 60CT-1)
17. 2 Chevette Automobiles (Chevrolet)
18. Timer
19. 4 Stainless Steel Tanks for Development
20. 4 Reels for Developing
21. 8 Instructors Desks
22. 2 Executive Desks
23. 2 Secretarial's Desks
24. 4 Filing Cabinets

/jec
10/30/81
MONROVIA

EXHIBIT F

List of National Commission on Youth and Sports
Vocational Training Programs.

1. Monrovia Vocational Training Center
2. Klay
3. Business/Domestic Training Center
4. National Youth Training Center
5. Youth On-The-Job-Training Program
6. Liberian Opportunity Industrialization Center (LOIC)

EXHIBIT G

Evaluation of Employer Training

Findings

As a part of the interim evaluation site, visits were made to two industries participating in the program. The purpose of the site visits was threefold: First, to observe OJT in action; Second, to interview trainees; and Third, to interview participating employers.

The interviews were conducted at the site. All trainees were interviewed together. Each was asked -

- (a) How long have you been in the shop?
- (b) What machines can you operate?
- (c) What have you learned?
- (d) What do you want to do after training?
- (e) How do you like the program?

A total of 18 trainees were interviewed. Of the 18, five had earned certificates of completion and were employed in the industries where they had been trained.

With the exception of two persons, the trainees interviewed had been in the program for at least two years. The range went

as high as 8 years in training, however.

The trainees were able to describe their programs and stated that they liked it. With one exception, the trainees were learning to perform all functions associated with their vocational area.

The interviews with employers were designed to determine how they conduct the OJT and their view of YOJT program.

The employers stated that each trainee works with a journeyman who instructs and supervises. The trainee in theory, if not always in practice, moves around the shop mastering the relevant skills at each station.

The employers were unclear on the criteria by which they determined a trainee should receive a certificate of completion. The employers emphasized work attitudes as an important part of the training and the evaluation of trainees.

Conclusions

The site visits to two participating industries revealed both strengths and weaknesses of the program, as it presently operates:

Strengths

1. Both the trainees and the employers feel they benefit from the program.
2. Successful trainees are employable, frequently in the industries in which they were trained.
3. Youths in the program develop defined career goals and aspirations.

Weaknesses

1. The evaluation of trainee performance needs greater standardization. Ability to work independently is the general criterion used.
2. The training program is limited to a practicum. Some understanding about the industry, union membership, the nature of the tools, the vocabulary, and applications are needed to supplement the practicum (the trainees interviewed asked for some supplemental classroom instruction).

The weaknesses appear to be the result of (a) lack of close supervision of previously placed trainees, and (b) confusion and inconsistency on the part of employers about their role and responsibilities in the program.

The partial solution, which was discussed with U.S. AID and NYSC, is to appoint the members to the YOJT Advisory Council. The original project design included an Advisory Council, composed of business owners participating in the YOJT program. This council is intended to be the vehicle through which the training program can achieve quality, control, and business support.

(NOTE: According to Commission officials, action on formulating the Advisory Council may be forthcoming).

EXHIBIT H

YOJT Program Training Materials and Roster of Trainees

YOUTH ON-THE-JOB TRAINING PROGRAM
NATIONAL YOUTH AND SPORTS COMMISSION
MONROVIA, LIBERIA

September 21, 1981

ORIENTATION SEMINAR
September 21-23, 1981

Schedule:

Monday, September 21, 1981

8:30-9:00	Opening Session General Introduction Statement from Acting Director, Mr. Keah Statement from Deputy Director-General, Mr. Crayton Statement from Assistant Director-General, Mr. Collins
9:00-9:10	Break
9:10-10:00	Staff Introductions Trainee Introduction
10:00-10:10	Break
10:10-11:00	Some scenes from cooperating industries (slides Slides/Tape on Safety Open Discussions (Q & A)
11:00-11:10	Break
11:10-11:50	Individual Sessions with Trade Instructors
11:50-12:00	Closing Session a. Review of activities for the day b. Projections for Tuesday

Tuesday, September 22, 1981

8:30-9:00	General Session a. Outline of program for today b. Impressions from trainees
9:00-9:10	Break

Orientation Seminar

- 2 -

Tuesday, September 22, 1981

- 9:10-10:00 Discussions
 a. Trainee Responsibilities
 b. Center's Responsibilities
 c. Monitoring and program evaluation
- 10:00-10:10 Break
- 10:10-11:00 Safety on the job - Mr. Besnon
 Job Assignments - Mr. Sawyer
 Reporting Progress Mr. Keah and
 and or problems Mr. Sawyer
- 11:00-11:10 Break
- 11:10-11:50 Instructors meet Trainees
 Mr. Benson General Trade: Plumbing,
 (6) Mr. Forte Carpentry, Drafting, Masonry
 (8) Mr. Gailor Mechanics
 (13) Mr. Nagbe Electrical, A/C, Electronics
- 11:50-12:00 Closing Session for today
 a. Review of today's activities
 b. Projections for Wednesday

Wednesday, September 23, 1981

- 8:30-9:00 Opening Session
 a. Review of Previous day
 b. Outline for today
 c. Some general statements
- 9:00-9:10 Break
- 9:10-10:00 Special discussions on possible assignments
 Mr. Sawyer and Staff
- 10:00-10:10 Break

.../3

Orientation Seminar:

Wednesday, September 23, 1981

10:10-11:00

Trainee Registration

**Fill forms for contacts and reference
(Technical Instructors in charge)**

11:00-11:10

Closing Session

- a. Program Review - Butcher
- b. Decorum and Attendance - Mr. Sawyer
- c. Announcements - Mr. Forte
- d. Records - Ms. Coleman

/jec
17/9/81

YOUTH ON-THE-JOB TRAINING PROGRAM
NATIONAL YOUTH AND SPORTS COMMISSION
MONROVIA, LIBERIA

September 28, 1981

ORIENTATION SEMINAR
SEPTEMBER 28-30, 1981

Schedule:

Monday, September 28, 1981

8:30-9:00	Opening Session General Introduction Statement from Acting Director, Mr. Keah Statement from Assistant Director-General Mr. Charles Collins
9:00-9:10	Break
9:10-10:00	Staff Introductions Trainee Introduction Program Review
9:00-10:10	Break
10:10-11:00	Some scenes from cooperating industries (slides) Slides/Tape on Safety Open Discussions (Q & A)
11:00-11:10	Break
11:10-11:50	Individual Sessions with Trade Instructors
11:50-12:00	Closing Session a. Review of activities for the day b. Projections for Tuesday c. General Impressions

Tuesday, September 29, 1981

8:30-9:00	General Session a. Outline of Program for today b. Impressions from trainees
9:00-9:10	Break

Orientation Seminar

Tuesday, September 29, 1981

- 9:10-10:00 Discussions
- a. Trainee Responsibilities
 - b. Industrial Responsibilities (visitor
 - c. Center's Responsibilities (from two ind.)
 - d. Monitoring and program evaluation
- 10:00-11:10 Break
- 11:10-11:50 Instructors meet Trainees
- | | |
|------------|---|
| Mr. Benson | General Trade: Plumbing,
Masonry |
| Mr. Forte | Carpentry, Drafting, Cabinet-
making |
| Mr. Gailor | Mechanics, Machinist |
| Mr. Nagbe | Electrical, A/C, Electronics |
- 11:50-12:00 Closing Session for today
- a. Review of today's activities
 - b. Projections for Wednesday

Wednesday, September 30, 1981

- 8:30-9:00 Opening Session
- a. Review of Previous day
 - b. Outline for today
 - c. Some general statements
- 9:00-9:10 Break
- 9:10-10:00 Special discussions on possible assignments
- Mr. Sawyer and Staff (Visitor from one industry)

Orientation Seminar

Wednesday, September 30, 1981

10:00-10:10	Break
10:10-11:00	Trainee Registration Fill forms for contacts and references (Technical Instructors in charge)
11:00-11:10	Break
11:10-12:00	Closing Session a. Program Review - Mr. Butcher b. Decorum and Attendance - Mr. Sawyer c. Announcements - Mr. Forte d. Records - Ms. Coleman e. Final Student impressions of Seminar activities (Q &A) f. Final remarks - Mr. Butcher, Advisor Mr. Keah, Acting Director

Mac

12/24/81

YOUTH ON-THE-JOB TRAINING PROGRAM
35th CLAY STREET
MONROVIA, LIBERIA

October 27, 1981

LEARNING PACKAGE FORMAT

- INTRODUCTION - Basic information about the subject covered in the Learning Package.
- OBJECTIVES - Outline of what the student should know upon completion of the Learning Package.
- PRETEST - A test used to determine how much a student knows about the subject. If the student can show advanced knowledge of subject area or portions of the entire package, that portion or entire package may be skipped.
- CONTENT AREA - Information about the subject being studied in the Learning Package. Quizzes should be used throughout this section to test the gain of important points of information.
- SELF TEST - Self evaluation used by the student to measure knowledge gained.
- FINAL TEST - Test given by instructor to measure knowledge gained.
- REMEDIAL WORK- Work given to those who didn't obtain passing grades and need help to gain wanted skills.
- RETEST - To be used by those who needed remedial work.
- ADVANCED WORK- Work above what is considered basic knowledge needed. To be done by students who show special interest.

/jec
OJT/MONROVIA
10/27/81

The learning package on the history of electricity should use slides and a tape to show how electricity has been used to help improve life in Liberia.

The learning packages on safety should illustrate the basic safety rules which should be followed when doing automotive or electrical work.

These learning packages should show people performing tasks in a safe manner. Such as; wearing safety glasses when grinding, checking to see if the power in a circuit is turned off, etc.

The learning packages on tools should consist of a set of slides and tapes illustrating the various hand and power tools which are used in automotive and electrical work. The proper use of these tools should be demonstrated. Specific safety rules for special tools should also be explained here.

When the areas of history, safety and tools are covered, learning packages for performance tasks should be developed.

/jec
10/27/81
MONROVIA,

AUTOMOTIVE AND ELECTRICITY

GENERAL GUIDELINES FOR LEARNING PACKAGES:

Each learning package will consist of a series of color slides depicting a task and an audio tape explaining the slides.

At the beginning of each learning package, the trainee should be told what task or knowledge he will be able to demonstrate upon completion.

Provisions must be made to test the trainees performance before he starts a learning package. If a trainee can perform the task, there is no need for him to use the learning package. He may move on to the next one, (a more advanced task)

Each learning package should have the provision for testing the trainees performance after completion.

Each learning package developed must be field tested for validation.

In the areas of automotive and electrical, it has been decided that the first learning packages developed should be; history, safety and tools. These 2 topics represent the elementary background areas of both subjects.

EXAMPLES: The learning package on the history of automotive should show photos of early and late model automobiles. As the slides progress the tape will explain the development and improvement of mechanized transportation over the years. The slides and tape should also show what mechanized transportation has done to make life easier and how it has helped establish trade and industrial centers.

AUTOMOTIVE HISTORY

We need photographs and pictures that show:

Early forms of transportation (before mechanized forms)

Early forms of mechanized transportation

Modern forms of mechanized transportation

Transportation centers - shipping - rail - etc.

We also need a script for the tape which tells what types of transportation were used before mechanized transportation. We need an explanation of how mechanized transportation has been used to develop trade and industrial centers.

The slides and tape should also show what mechanized transportation can do for Liberia in the future,.

The role of the automobile mechanic should be defined. We should show why he is needed and what should happen without him.

Mr. Gailor should now be working on a script for the tape and looking for photos and pictures we can use.

ELECTRICAL HISTORY

We need photographs and a script for a tape showing what life was like before we had electricity - we should show what type of power was used before electricity.

ELECTRICAL HISTORY CONT.

We should show where electricity comes from and how it reached our houses and industries.

We should show photos of things that are used everyday which use electricity; lights, radios, tools, machines, etc.

The role of the electrician should be defined, what he does, what type of training he needs.

Mr. Nagbe should now be working on a script for the task as well as looking for photographs and pictures we can use.

/jec
10/29/81
MONROVIA,

*1 This learning package describes the procedure for changing the oil and the oil filter in an automobile engine.

*1 Slide shows a new oil filter and oil.

Remember when you are working you should follow all basic safety rules and procedures.

*2 If the automobile is on a lift check the lift mechanism to be sure that it is secure.

*2 Slide shows a car on a lift

*3 If the car is raised on jackstands or ramps be sure that the weight of the car is evenly distributed. *4

*3 Slide shows a car on jackstands properly placed

*5 If you are using jackstands or ramps be sure that the rear wheels are blocked.

*4 Slide shows a car supported by ramps properly placed.
*5 Slide shows a car with the rear wheels blocked.

*6 To proceed you will need the following tools

A pan to drain the old oil into.

An oil filter wrench.

A wrench to fit the oil drain plug.

A new oil filter.

Fresh oil.

*6 Slide shows the tools needed

*6 Slide shows the tools needed

*7 Slide shows chart for oil filter identification

*7 When changing the oil and filter be sure to use the same type of filter found on the car or the proper equivalent.

*8 Always use the same type oil that the engine manufacturer recommends.

*8 Slide shows different grades of oil.

*9 When changing the engine oil the engine should be at normal operating temperature. Not hot but warm. The reason for this is warm oil holds more dirt and engine damaging deposits than cold oil.

*9 Slide of an engine temperature gauge showing proper engine temperature.

*10 After the car is elevated place the pan which will receive the old oil under the oil drain plug.

*10 Slide show the oil drain in place.

*11 The oil drain plug is located at the bottom of the engine.

*11 Slide show the location of the oil drain

*12 Use the proper size wrench to loosen the oil-drain plug. After it is loose the drain plug may be removed by hand. CAUTION. the oil may be hot do not let the oil drip on your hands.

*12 Slide show the oil drain being removed.

*13 After the drain plug has been removed it should be cleaned off and set aside.

*13 Slide show the drain plug being cleaned.

When the drain plug is removed the oil will drain out let the oil drain as you continue to work.

*14 When removing the drain plug be sure not to touch any part of the engine that might be hot, such as the exhaust manifold or pipes.

*14 Slide showing the exhaust pipe or manifold.

*15 Now we can remove the oil filter. The oil filter may be located in different areas on different engines. Locate the oil filter and use the oil filter wrench to loosen it.

*15 Slide showing how the oil filter wrench is used.

*16 After the oil filter is loose it may be removed by hand. The oil filter is removed by turning it counter-clockwise.

*16 Slide showing the oil filter being removed from the engine.

*17 The oil filter mounting surface should be cleaned with a cloth.

*17 Slide showing the oil filter mount being cleaned.

*18 After it is clean examine the oil filter mounting surface. It should be free from dirt and there should be no trace of oil filter gasket left on the surface.

*18 Slide showing mounting surface after it is clean.

*19 Sometimes the oil filter gasket will stick to the mount and will have to be scraped off with a gasket scraper. Be careful not to scratch the mounting surface.

*19 Slide showing oil filter gasket being removed with scraper.

*20 Before installing the new filter let's take a look at its various parts.

*20 Slide showing oil filter with parts identified.

*21 Notice the rubber gasket on the oil filter.

*21 Slide showing the oil filter gasket.

*22 Before installing the new oil filter a small amount of clean oil should be applied to the gasket. Do not use greese. The oil applied to the gasket keeps the gasket from sticking the next time the filter is removed.

*22 Slide showing oil being applied to filter gasket.

*23 After the filter mount has been cleaned and a small amount of oil applied to the filter gasket the oil filter is ready to be installed. The filter is installed and tightened by hand. Do not use the oil filter wrench to tighted the filter.

*23 Slide showing oil filter being placed on the mount.

*24 Carefully place the filter on the mount an turn it clockwise untill it is snug. Then turn the filter $\frac{1}{4}$ of a turn by hand. Do not overtighten the oil filter, if you do you will not be able to remove it the next time it has to be changed.

*24 Slide showing $\frac{1}{4}$ turn.

*25 After yoy have installed the oil filter and the oil has stopped draining fron the crankcase you should replace the drain plug.

*25 Slide showing clean drain plug.

*26 Be sure to clean the drain plug mounting surface.

*26 Slide of drain plug hole after cleaning.

*27 Do not over tighten the drain plug when you install it, if you do you may damage the threads and the oil may leak.

*27 Slide of drain plug being installed

*28 Now you are ready to install the new oil. Be sure to use only the type of oil specified by the engine manufacturer.

*28 Slide of oil being added to engine.

*29 Be sure to use the proper amount of oil specified by the engine manufacturer.

*29 Slide of oil being checked with the dip stick.

*30 After you have installed the oil and checked the level start the engine and watch the oil pressure gauge or the oil light. If the oil pressure gauge does not register the correct pressure or if the oil light does not go out within 30 seconds stop the engine.

*30 Slide of oil pressure gauge.

*31 If the oil pressure is ok let the engine run for a few minutes. then shut it off and look at the oil filter and the drain plug to see if they are leaking. If you followed the procedure carefully there should be no problem. If the oil is leaking you must correct the problem. Make sure that the oil filter and drain plug are tight.

*31 Slide of oil filter and drain plug.

*32 Check the oil level again. If it is low add more oil. Do not over fill the crankcase.

*32 Slide of oil level being checked.

*33 After you have installed the oil and filter and checked for leaks and checked the oil level clean up the work area and tools.

*33 Slide of tool in proper place.

STEPS FOR PROCESSING ENAMALS

First Developer: Set the timer for 6 minutes and check to be sure that the temperature of the First Developer is 100°. Start the timer and pour the developer into the tank. Tap the tank to dislodge air bubbles and agitate the tank by inverting it 5 times every 30 seconds. After 6 minutes pour the First Developer back into the bottle marked First Developer.

First Wash: Set the timer for 2 minutes. Start the timer and pour the water into the tank. Tap the tank to dislodge air bubbles, do not agitate the tank. After 2 minutes pour the water into the sink.

Reversal Bath: Set the timer for 2 minutes. Start the timer and pour the Reversal Bath into the tank. Tap the tank to dislodge air bubbles, do not agitate the tank. After 2 minutes pour the Reversal Bath back into the bottle marked Reversal Bath.

Color Developer: Set the timer for 7 minutes, check to be sure that the Color Developer is 100°. Start the timer and pour the Color Developer into the tank. Tap the tank to dislodge air bubbles and invert the tank 5 times every 30 seconds. After 7 minutes pour the Color Developer back into the bottle marked Color Developer.

Conditioner: Set the timer for 2 minutes. Start the timer and pour the conditioner into the tank. Tap the tank to dislodge air bubbles, do not agitate. After 2 minutes pour the Conditioner back into the bottle marked Conditioner.

Bleach: Set the timer for 6 minutes. Start the timer and pour the Bleach into the tank. Tap the tank to dislodge air bubbles and invert the tank 5 times every 30 seconds. After 6 minutes pour the Bleach back into the bottle marked Bleach.

Fixer: Set the timer for 4 minutes. Start the timer and pour the fixer into the tank. Tap the tank to dislodge air bubbles and invert the tank five times every 30 seconds. After 4 minutes pour the Fixer back into the bottle marked Fixer.

Final Wash: Set the timer for 3 minutes. Start the timer and pour the water into the tank. Tap the tank to dislodge air bubbles. After 3 minutes pour the water into the sink. Reset the timer for 3 minutes. Start the timer and pour the water into the tank again. After 3 minutes pour the Water into the sink.

Stabilizer: Set the timer for 30 seconds. Start the timer and pour the Stabilizer into the tank. After 30 seconds pour the Stabilizer back into the bottle marked Stabilizer.

Dry: Hang the film to dry. The film should not be handled until it is completely dry.

Clean all tanks and reels thoroughly after use.

After developing 20 rolls of film increase the time of the First Developer to 7 minutes.

To set the timer for processing Ektachrome, follow these steps.

Touch Processing. The display will show 0:00.
Touch Enter. The display will show 0:00.
Touch 6-0-0. The display will show 6:00.
Touch Enter. The display will show 0:00.
Touch 2-0-0. The display will show 2:00.
Touch Enter. The display will show 0:00.
Touch 2-0-0. The display will show 2:00.
Touch Enter. The display will show 0:00.
Touch 7-0-0. The display will show 7:00.
Touch Enter. The display will show 0:00.
Touch 2-0-0. The display will show 2:00.
Touch Enter. The display will show 0:00.
Touch 6-0-0. The display will show 6:00.
Touch Enter. The display will show 0:00.
Touch 4-0-0. The display will show 4:00.
Touch Enter. The display will show 0:00.
Touch 3-0-0. The display will show 3:00.
Touch Enter. The display will show 0:00.
Touch 3-0-0. The display will show 3:00.
Touch Enter. The display will show 0:00.
Touch 0-3-0. The display will show 0:30.
Touch Enter. The display will show 0:00.

To start the timer at the beginning of the program touch Reset. The display will show 6:00. To begin the program touch Start/Hold.

At the end of each step it is necessary to touch Start/Hold to stop the timer from running into the next step.

To check the timer to be sure that it is programmed correctly follow these step.

- Touch Reset. The display should show 6:00.
- Touch Step-1. The display should show 6:00.
- Touch step-2. The display should show 2:00.
- Touch Step-3. The display should show 2:00.
- Touch Step-4. The display should show 7:00.
- Touch Step-5. The display should show 2:00.
- Touch Step-6. The display should show 6:00.
- Touch Step-7. The display should show 4:00.
- Touch Step-8. The display should show 3:00.
- Touch Step-9. The display should show 3:00.
- Touch Step-0. The display should show 0:30.

To start the timer at the beginning of the program touch Reset. The display will show 6:00.

LEARNING PACKAGE #2

MEASUREMENT USING THE
METRIC SYSTEM

INTRODUCTION - Although not widely used in Liberia and the United States, the Metric System is the most widely used system of measurement throughout the world.

- OBJECTIVES
- The student will be able to use the metric system of measurement.
 1. The student should know the submultiples and multiples of the meter.
 2. The student should know the equipment submultiples of the meter.
 3. The student should be able to measure length and width of object using the metric system.

PRETEST

1. Write the following terms in their shortest forms:

- a. Meter
- b. Centimeter
- c. Decimeter
- d. Millimeter

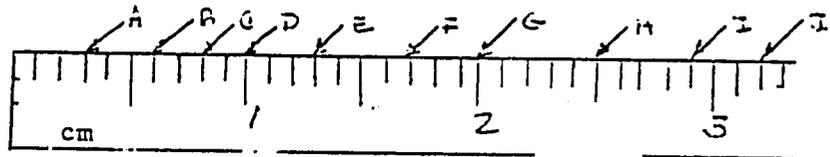
2. How many millimeters are in 1 meter?

3. How many millimeters are in 1 decimeter?

4. How many decimeters are in 1 meter?

5. How many centimeter are in 1 meter?

6. On the following diagram of a metric rule, what are the measurements marked:



A. _____

F. _____

B. _____

G. _____

C. _____

H. _____

D. _____

I. _____

E. _____

J. _____

THE METER AND ITS SUB-MULTIPLES

CONTENT - The basic unit of measurement of length and width in the metric system is the meter.

For the measuring of objects smaller than a whole meter we can use sub-multiples of the meter.

The sub-multiples and multiples used with the metric system are based on 10.

One decimeter equals one tenth of a meter or in other words 10 decimeters equal one meter.

One centimeter equals one hundredth of a meter or 100 centimeters equal one meter.

One millimeter equals one thousandth of a meter or 1000 millimeters equal one meter.

Other relationships are:

10 millimeters equal 1 centimeter

100 millimeters equal 1 decimeter

10 centimeters equal 1 decimeter

QUIZ #1

1. How many millimeters equal one meter? _____
2. How many centimeters equal one meter? _____
3. How many decimeters equal one meter? _____
4. 10 millimeters equal how many centimeters? _____
5. 10 centimeters equal how many decimeters? _____
6. 10 decimeters equal how many meters? _____

SHORTEN FORMS OF METRIC TERMS

The metric system has a long form and short form of writing terms.

The term meter or unit of measuring lengths and width can be shorten to "m".

The terms milli, centi, and deci can also be shortened:

Milli - m

Centi - c

Deci - d

Therefore the term millimeter can also be written 'mm'

The term centimeter can also be written 'cm'.

The term decimeter can also be written 'dm'.

QUIZ #2

1. What is the shortest form of writing centimeter? _____
2. What is the shortest form of writing decimeter? _____
3. What is the shortest form of writing millimeter? _____
4. What is the shortest form of writing meter? _____

READING THE METRIC RULER

A metric ruler is usually divided into millimeters. Each millimeter is not numbered because of the size and number of them.

Centimeter are numbered. On the metric ruler after every 10 millimeter a number will appear to show the number of centimeters.

Every ten centimeters equals 1 decimeter, these usually aren't marked on the scale, but can be easily determined.

A meter stick is one meter long containing ten decimeters, one hundred centimeters, and one thousand millimeters.

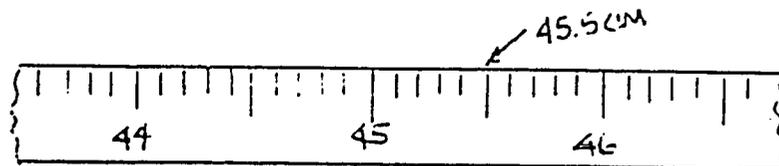
Since most metric measurements taken smaller than one meter are usually taken in centimeters, the person dealing with the metric system should make specific note of the location of centimeters.

When reading a measurement that falls between two marked centimeters the user should simply count the number of smaller marks or millimeters needed for that measurement.

EXAMPLE: A piece of material is needed. Its length is 45.5cm. To cut that needed piece of material you must measure it for accuracy.

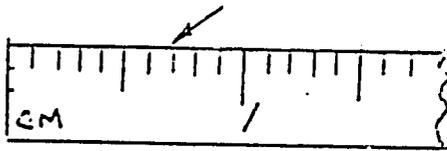
The person measuring that piece of material could simply place his meter stick or rule next to it and make note of 45cm then count 5 marks or millimeter between 45 and 46cm. The user may note that on most metric rules the fifth millimeter between two centimeters is marked by a line slightly under the other millimeters.

The diagram shows what a metric rule looks like and where the previous measurement can be found:

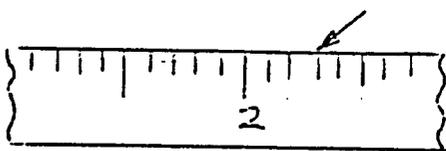


QUIZ #2

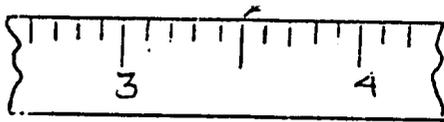
DIRECTIONS: Determine the measurements indicated on the following diagrams:



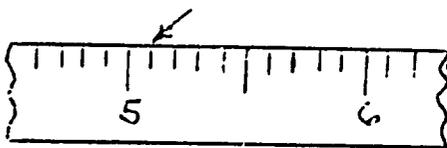
ANS: _____



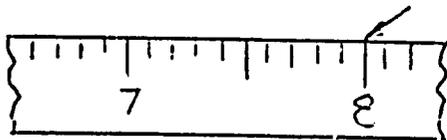
ANS: _____



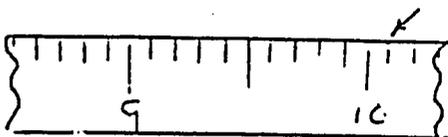
ANS: _____



ANS: _____



ANS: _____



ANS: _____

At times when using the metric system, you may have to measure large numbers of meters. The metric system has special terms that describe these large numbers of meters.

Ten meters equal one dekameter.

One hundred meters equal one hectometer.

One thousand meters equal one kilometer.

The words Decka & Hecto are not much used in daily life, but the Kilo is used daily. In the metric system the term Killo meter takes the place of the term mile in the English System. The mile is equal to 1.6-kilometers.

Just as in the terms Deci, Centi and Milli, the terms Decka, Hecto and Killo have shorten forms and should be recognized when seen:

Decka is shortened to 'D'

Hecto is shortened to 'H'

Killo is shortened to 'K'

Not that the shortened form of subdivision used in the metric system use lower case letters while multiples use upper case letters.

QUIZ #3

1. What are the shortened forms of the following words:
 - a) Decka: _____
 - b) Hecto: _____
 - c) Killo: _____
2. How many meters equal the following multiples?
 - a) Decka: _____
 - b) Hecto: _____
 - c) Killo: _____
3. Change the following measurements into the form asked for:
100m equals _____ Hm

10m equals _____ Dm
1000m equals _____ Km
2,300m equals _____ Km
23m equals _____ Dm
230m equals _____ Hm

QUIZ #5 ANSWERS
1. D, H, K,
2. 10, 100, 1,000
3. 1.Hm; 1.Dm; 1.Km; 2.3Km; 2.3Dm; 2.3Hm

GOING METRIC FOR CAREER TEACHERS -- NOTES AND COMMENTS

1. ISLANDS IN A METRIC WORLD. The United States is the last Major industrial nation to "go metric."
2. THINGS WE MEASURE. Every day billions of measurements are made in industry, commerce, and by the consumer.
3. KINDS OF MEASURING SYSTEMS. The three kinds of measuring system are:
 1. Customary, commonly called English in the United States and Imperial in the United Kingdom, Canada, Australia.
 2. The old metric system which includes the CGS-centimetre, gram, and second; and MKS-metre, kilogram, and second. Metric units of the metre, gram, litre, and centigrade variety are only 175 years old but are widely used. Many are now inaccurate and imperfect.
 3. SI metric, the international system of measuring units called SI for its basic name-Systeme International d'Unites - is a modernized version of the metric system established in 1960.
4. THREE MAJOR TYPES OF MEASURING SYSTEMS
5. INTERNATIONAL SYSTEM OF UNITS. There are seven base units and two supplementary units, plus a large number of derived units.
6. OVERLAY FOR INTERNATIONAL SYSTEM OF UNITS. Note that all symbols are lower case except those that were named after important scientists such as the kelvin after Lord Kelvin, a British scientist.
7. PREFIXES, EXPONENTS, AND SYMBOLS. All base units use the same prefixes, exponents, and symbols. The three most commonly used are base unit, one thousand times the base unit, and one-thousandths of the base unit. For example, for length it would be the metre, kilometre, and millimetre.
8. THE FAMILY OF SI METRIC. (first sheet) Here you see four of the brothers --the metre, the kilogram, kelvin, and the mole.

Since the kelvin is used only in scientific work, the degree Celsius is used in every-day activities. The litre is called a cousin because it is a derived unit.

9. THE FAMILY OF SI METRIC. (second sheet) Three more of the SI family have been used for many years also in the customary system including the ampere, the second, and the candals. Some of the other derived units include the newton, watt, joula, and pascal.
10. THIS IS THE WAY THAT THE CUSTOMARY (ENGLISH) SYSTEM DEVELOPED
Note that the customary system was based on the human body while the metric system originally was based on the distance from the north pole to the equator.
11. MAN AS A MEASURING ROD. All the original customary units are directly or indirectly related to the human body.
12. MEET BROTHER METRE. no comment.
13. I'M BROTHER METRE, Note that the metre is a little longer than the yard.
14. HERE'S HOW THE METRIC MEASURE COMPARES WITH THE FOOT. The inch equals exactly 25.4 millimetres. Four inches would be 101.6 millimetres or approximately 102.
15. NOW STOP AND THINK. Note how the metric system is very similar to our money system. They are both a decimal system and have similar names. The three most commonly used measurements for smaller distances are the metre, the centimetre, and the millimetre. These are very easy to remember in relationship to a dollar. 100 cents, and 1000 mils.
16. THE SMALLEST DIVISION ON ME IS ONE MILLIMETRE. Note how a millimetre is about half way between 16ths and 32nds. Students should begin to get an idea of the actual size of the millimetre

17. NOW LET'S HAVE A BALL. The metric size could be covered and students would be asked to give the equivalent of the inch size.
18. AND TAKE A LOOK AT YOUR MONEY. The thickness of a dime is a good reference for estimating one millimetre (1 MM) and a nickel for estimating two millimetres (2 mm).
19. A KILOMETRE. In oral conversation note that the emphasis is on the first syllable (kill'-o-metre). Not on the second. To place the emphasis on the last syllable is wrong. The kilometre is about $5/8$ of a mile.
20. ALL INTERNATIONAL SPORTS ARE IN SI METRIC MEASUREMENTS. Any students watching the Olympics would have heard all measurements referred to in metric terms.
21. WATER GLASS. To begin to think metric, it is a good idea to be able to estimate sizes. What is the diameter of the water glass; how tall is it?
22. MATCH BOX. No comment
23. Basketball: Players. Would a two-metre tall basketball player be a good center?
24. MEET BROTHER KILOGRAM. No comment
25. I'M BROTHER KILOGRAM. No comment
26. Kilogram. A KILOGRAM of butter would be a little more than twice a pound. The use of the term "Kilo" is incorrect.
27. A KILOGRAM (kg) EQUALS 1000 GRAMS (g) . no comments
28. A NICKEL WIGHS ABOUT FIVE GRAMS. Does the student remember the thickness of a nickel?

29. FOR VERY SMALL WEIGHTS. No comment
30. FOR GREATER WEIGHTS THE METRIC TON IS USED. A metric ton is called the "tonne" in SI metric.
31. MANY GROCERY ITEMS ARE MARKED WITH BOTH CUSTOMARY (ENGLISH) AND METRIC WEIGHT. Is 14 ounces exactly 397 grams?
32. MEET FIRST COUSIN LITRE. No comment
33. MILK. The litre is about 6 percent more than the quart.
34. IN THE METRIC SYSTEM THERE IS A DEFINITE RELATIONSHIP BETWEEN UNITS. It is important to point out to student how valuable this is in learning a new system of measurement. There is no relationship between capacity, mass, weight, and length in the customary system.
35. THREE MEASUREMENTS TO REMEMBER. No comment
36. MEET BROTHER CELSIUS --THE UNIT OF TEMPERATURE. No comment
37. BROTHER CELSIUS TEMPERATURE. Note that the term centigrade is no longer used even though it is commonly found in chemistry and physics books. What would be a good day for skiing? in degrees Celsius?
38. 25 DEGREES FAHRENHEIT AND 25 DEGREES CELSIUS. Note that one is a winter scene and the other a summer scene.
39. TEMPERATURE. No comment
40. SISTER SECOND. No comment
41. SISTER AMPERE. No comment
42. SISTER CANDELA. No comment
43. BROTHER MOLE. No comment
44. SIMPLIFIED METRIC EQUATION--
Note how easy it is to change in the metric system from larger to smaller units is contrast to the customary system.

/jec

10/29/81

MONROVIA

June 22, 1981

TASK AREAS COMMON TO MASONRY AND WOODWORKING

Measurement
Drawing Skills
General Safety

MEASUREMENT TASKS

1. A student should know the different units of measurement used in the english system.
 - a) The parts of an inch
 - b) Inches
 - c) Feet
 - d) Yards

2. A student should know the different units of measurement used in the metric system.
 - a) Meters
 - b) Lite -
 - c) Grams
 - d) The subdivision of base units:
Killo Dici
Hecto Centi
Decto Milli

3. A student should know common tools used for measurement.
 - a) Zig-zag rule
 - b) Squares
 - c) Tapes

4. A student should be able to measure materials following basic plans.

DRAWING SKILLS

1. A student must be able to identify and know the used of different tools.
 - a) Drawing board
 - b) T-square
 - c) Triangles
 - d) Different grades of pencils
 - e) Compasses

2. The student must know the care and proper use of tools.

3. The student must be able to identify different types drawing orthographic, isometric, and cabinet.

4. The student must be able to identify objects from basic plans.
5. The student must be able to produce basic drawings.

GENERAL SAFETY

1. The student must understand that tools must be used safely and the right tool be used for the appropriate job.
2. The student must know that horseplay is not permitted in a work situation.
3. The student should know that working areas must be kept clean, well organized, and free from hazards.
4. The student should know the appropriate and safe way to store tools and supplies not in use.
5. The student must understand the basic use of sight and hearing protection.
6. The student must know the proper type of clothing for the working situation.
7. The student must know basic equipment maintenance.
8. The student must know that he is required to demonstrate basic equipment operating procedures before operating machinery.
9. The student must know that only the proper materials should be used when attempting an assigned task.
10. The student should know not to attempt any task without instructor's permission.

SETTING OUT FOUNDATIONS

Introduction - This unit should acquaint the student with the basic processes used in the setting out of a building.

- Objectives
- 1. The student should know the following terms use to describe a building that is set out accurately:
 - A. Level
 - B. Square
 - C. Plumb

 2. The student should know the following terms use to describe the process of setting out a building:
 - A. Orientation
 - B. Marking
 - C. Placing "BatterBoards"

P R E T E S T

Direction:

Place the following words in their proper places:

Square	Lines
Plumb	Length
Level	Depth
Measurement	Unhealthy
Width	Orientation
Expensive	Marking
Batter Boards	

1. Walls are _____ when they are straight up and down no leaning to one side or the other
2. _____ walls are parallel and have the same length.
3. _____ is the process used by the builder to locate what direction he wants his building to face.
4. A building could be _____ and _____ if the foundation is constructed poorly.
5. _____ is the process of drawing the exact outline of the building's foundation.
6. A building is said to be _____ when no part of the floor or foundation is higher than another
7. During the process of setting out a foundation, the exact _____, _____, _____ and position of the foundation trench must be marked on the ground.
8. _____ are used to mark the position of the foundation inside walls, doors, and windows.
9. In order to begin digging the trenches required for a building's foundation, the builder must first transfer the _____ and _____ indicated on the foundation plan.

C O N T E N T

In order to begin digging the trenches required for a building's foundation, the builder must first transfer the lines and measurements indicated on the foundation plan. The exact length, width, depth, and position of the foundation trench must be marked on the ground. This is known as setting out and is probably the most critical step in the entire construction process.

A building that is set out accurately will be:

Level: No part of the floor or foundation is higher than another.

Square: Walls parallel and the same length.

Plumb: Straight up and down, not leaning to one side or the other.

A building that is set out carelessly will be difficult or impossible to construct according to plan. As a result, the finished structure may be expensive to maintain and unhealthy.

There are three major steps to setting out. At this time is not necessary for you to know how to do the processes but it is important for you to know what the processes are.

Orientation:

The first process is orientation. In this process the builder has to locate what direction he wants his front wall to face.

Marking:

The second process is marking a simple outline of the building's foundation on the ground. There are three important factors in this process:

1. The length of each wall must be marked exactly.
2. The string must be exactly level.
3. The corners must be square exactly 90 degrees.

Placing Batter Boards:

The third process is the placing of the Batter Boards around the foundation, outline and marking the position of inside walls, doors, and windows on the boards.

QUIZ:

DIRECTIONS: List the following major steps used in setting out a building in their proper order by placing the correct number in front of the terms:

- a. _____ the placing of batter boards
- b. _____ orientation
- c. _____ marking a simple outline of the building

DIRECTIONS: Match the following terms with their correct explanation:

_____ A simple outline of the building's foundation on the ground.

Placed around the outline of the building's foundation outline and marking the position of inside walls, doors, and windows.

The process in which the builder locates what direction he wants his front wall to face.

Q U I Z

DIRECTION: Match the following words with their proper meanings:

1. _____ No part of the floor or foundation is higher than the other.
2. _____ Walls parallel and the same length.
3. _____ Straight up and down not leaning to one side or the other

POSSIBLE ANSWERS: Square; Plumb; Level

DIRECTION: Fill in the following blanks with the correct missing words:

4. In order to begin digging the trenches required for a building's foundation, the builder must first transfer the _____ and _____ indicated on the foundation plan.
5. The exact _____, _____, _____ and position of the foundation trench must be marked on the ground.
6. A building carelessly set out may be _____ to maintain and _____.

POSSIBLE ANSWERS: Measurements; Expensive; Length, Unhealthy Width; Lines; Depth.

4. Lines, Measurements
5. Lengths, Width, Depth
6. Expensive, Unhealthy

1. Level
2. Square
3. Plumb

ANSWERS:

ROSTER

TRAINEES AND TRAINERS

SEMIAR ARMS COMPANY:

CHRISTEN E. WINTER	Cabinetmaking
Matthew Nyeto	Cabinetmaking

BATHING PARLOR:

MICHAEL CAHN	Electricity
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MODERN ELECTRICAL MACHINE SHOP:

WILLIAM BLEETAN	Crankshaft Mechanics
JOSEPH GDMER	Crankshaft Mechanics
TOLEMY JUDAH	Crankshaft Mechanics
ALVIN LANG	Machinist

RADIO REPAIRING:

WILFRED GARR	Radio Repair
B YAK BROWN	Radio Repair
SOLOMAN MENSH	Radio Repair
JOSEPH MORRIS	Radio Repair
ISAM SHAYER	Radio Repair
MARZ ZELCI	Radio Repair

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George Raffi	Dry Cleaning
James Sinebal	Dry Cleaning
Otis Tappan	Dry Cleaning
Jose ...	Dry Cleaning
Elizabeth ...	Dry Cleaning

DRY CLEANING:

...

ROSTER
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SAM'S GARAGE

FRINCE JAMES BAILEY	Mechanic
DAO BLOE	Mechanic
PATRICK DARAMEY	Auto Electricity
BOB DOE	Mechanic
AMCS CARTER	Engine Overhaul
JOSEPH GRAY	Mechanic
DAVID BELLAH KAMARA	Body Fender
MORRIS KAMARA	Welding
ALEON KAMARH	Mechanic
JAMES GBELEE KONIGAE	Mechanic
NATHANIEL JUIS	Engine Overhaul
MORRIS SAYE NEWON	Mechanic
STEPHEN FAYE	Electrical Mechanics
K. LAWRENCE FAYNE	Mechanics
ANTHONY SAYE	Fuel System Repair
JOHN SIRLEAF	Body and Fender Work
DAVID TAMOA	Spray Painting
TONWEH WILSON	Mechanic
MATTHEW YAMBI	Parts Clerk

PRIMO DRY CLEANING

LAWRENCE W. COOPER	Dry Cleaning
BINDER M. PASSEWE	Desk Clerk
THOMAS CARL WALO	Laundry
PETER MENTOE WEEA II	Laundry

REPUBLIC GARAGE

JOHNSON DARE DOBAR	Body and Fender
WILFRED WILLIE-KEEHE	Mechanics
PETER T. PAUKPA	Body and Fender
ABRAHAM YAKPAWOLO	Mechanics

REGISTER

TRAINERS AND TRAINEES

NABIL ABUHAL WORKSHOP:

KHANGI, WALID A. Machinery

NATIONAL SERVICE CENTER:

KAMARA, MOHAMED A. A/C Refrigeration

JOSEPH WORKSHOP:

BROWNE, ISAAC Mechanics

UNION GARAGE:

WILLIE-PAI, BRORLORWOLO Mechanics

FREEMAN GARAGE:

TUAZAMA, MOSES Mechanic

WAGNER, CAINE Mechanics

FDA WORKSHOP:

LUNZI, ABDULLEI MECHANICS

JOSEPH GARAGE:

SAWYER, AUGUSTUS Mechanics

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DOCTOR OF MOTORS:

COLE, JERRY Crankshaft Polishing

KIL ELECTRONIC WORKSHOP:

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COLE, PATRICK D. ELECTRONICS

GBARTER, EDWARD Y. Electronics

Jones, Joe Electronics

WARWAY, STEPHEN ELECTRONICS

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LIBERIA PETROLEUM REFINERY COMPANY:

COLE, BENJAMIN SINNA -Welding and Pipe Fitting
Davis, Benjamin A. -Heavy Duty Mechanic

ELECTRONICS WATANEL COMPANY:

SMITH, DENNIS Electronics

NABIL A. MARTHABA WORKSHOP:

DAHN, JOSEPH Machinery

DELATI'S WORKSHOP:

BARDEREA, SCLIMON A/C Refrigeration

TECHNICAL MACHINE SHOP:

GBAHA, JOSEPH Machinery

GIBSON, SACKOR O. Mechanics

JEAH, TAYLAH Machinery

Washington, Kolulo Machinery

SCOTT BROTHERS CABINETMAKING:

KHASU, HENRY Carpentry

WLEH, PETER TAGBE Carpentry

WORLOBAH, THOMAS K. Carpentry

TIKONBLAH, DENNIS Cabinetmaking

SAMI JABAR UPHOLSTERY:

SAYE, ZEPHERSON Upholstery

Jannah, MOHAMED A Upholstery

SCHBAIR GARAGE

DEAN, HANI L. Mechanics

ROSTER

TRAINERS AND TRAINEES

WESTINGHOUSE ELECTRIC:

NEMICK AMRON	Electricity
SAM BENDRAN	A/C Refrigeration
NATHANIEL BOIE	A/C Refrigeration
SAMUEL FRITTE	Electronics
PHILIP SAM	A/C Refrigeration
ADOLPHUS WILMOT	Electricity
SPENCER WRIGHT	Electricity

GILSON APPLIANCES:

EARL C. MANTO	A/C Refrigeration
ISSAAC PATE	Electricity
DENNIS SMITH	A/C Refrigeration
BUDIE THOMAS	A/C Refrigeration
NASA WEBER TOE	Electricity

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EDWARD Y. GEARTEA	Electronics
JOE HONLS	TV Servicing and Repair
STEPHEN MORRAY	TV Servicing and Repair

COLE ELECTRIC:

JOHN FLEVO	A/C Refrigeration
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BOOKS
TRAINERS AND MATRONS

MAINTENANCE AND REPAIRS:

ACCIDENTS AND

LOSS OF VEHICLES

Body Repair, welding

Engine Repair

Best Available Document

EXHIBIT I

References

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