

UNCLASSIFIED

INTERNATIONAL DEVELOPMENT

COOPERATION AGENCY

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

EGYPT: PROJECT 263-0090

INDUSTRIAL PRODUCTIVITY IMPROVEMENT

GRANT

VOCATIONAL TRAINING FOR PRODUCTIVITY  
SUB PROJECT PAPER

263-0090.3

1981

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PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add  
 C = Change  
 D = Delete

Amendment Number

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2. COUNTRY/ENTITY

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5. PROJECT TITLE (maximum 40 characters)

Vocational Training for Productivity

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY  
 09 27 86

7. ESTIMATED DATE OF OBLIGATION  
 (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 81 B. Quarter 4 C. Final FY 86

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

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	14,400	3,100	17,500	14,400	3,100	17,500
(Grant)	( 14,400 )	( 3,100 )	( 17,500 )	( 14,400 )	( 3,100 )	( 17,500 )
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S.						
1.						
2.						
Host Country		5,500	5,500		5,500	5,500
Other Donor(s)						
<b>TOTALS</b>	<b>14,400</b>	<b>8,600</b>	<b>23,000</b>	<b>14,400</b>	<b>8,600</b>	<b>23,000</b>

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) ESF	610	610				17,500		17,500	
(2)									
(3)									
(4)									
<b>TOTALS</b>						<b>17,500</b>		<b>17,500</b>	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

620 640 660 740 830

11. SECONDARY PURPOSE CODE

680

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

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

The project will (1) upgrade skills of employed workers, (2) respond to company specific training needs, (3) establish skill standards and trade tests and (4) improve the quality and relevance of entry level vocational skills.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY  
 03 84 09 85 08 86

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000  941  Local  Other (Specify)

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

17. APPROVED BY

Signature

Donald W. Brown

Title

Director

Date Signed

MM DD YY  
 8 13 81

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY  
 08 24 81

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Bunyan Bryant	LEG
John Chang	PROG/ECON
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Donald Brown

Director

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PART 1: SUMMARY AND RECOMMENDATIONS

A. Summary:

This five-year project is one of several Mission projects designed to increase the productivity of Egyptian industrial establishments. Related projects include: "Management Development for Productivity"; "Industrial Technology Application"; and "Industrial Production". The project aims at improving the quality and relevance of industrial skills that in combination with management and technology have a critical impact on industrial efficiency. The project will strengthen the Ministry of Industry and Mineral Resources' (MOIMR) ability to equip entry level workers with skills required by employers, upgrade the skills of employed workers; respond to company specific training problems; and establish skill standards and appropriate trade tests. During the project, special attention will be given to assisting the private sector and increasing skilled employment opportunities for women. The project will be initiated in two contiguous pilot regions, Alexandria and the Middle Delta -- but emphasis will be given to extending positive experience to the entire country as soon as possible during the life of the project.

The project will provide approximately 620 months of long and short term technical assistance, about 403 months of participant training and approximately \$1.9 million of commodities to support skills training. The AID contribution is \$17.5 million. The GOE contribution is \$5.5 million. AID inputs are as follows:

Technical Assistance	8,749
Participant Training	4,300
Commodities	<u>4,451</u>
TOTAL	17,500

The project will directly support other GOE efforts to improve the Productivity and Vocational Training Department's (PVTD) vocational training system, such as building new centers and re-equipping existing centers through World Bank and African Development Bank Loans II and III valued at approximately \$26 million. AID assistance will also strengthen the PVTD's capacity to determine precise equipment needs for the Bank's Fourth Educational Loan, now being planned. Technical Assistance provided by AID will include analysis of industrial training needs, establishment of instructional competencies and skills standards, preparation of curriculum and instructional materials, instructor training, in-plant training assistance and strengthening PVTD management. Short-term participant training will cover industrial training directors and first line managers as well as upgrading of PVTD staff. Commodities will include equipment to fill training center inventory gaps identified through task analysis, establishment of audio-visual production and delivery capability, materials to increase the amount of practical training, small amounts of training equipment and materials for individual companies, and equipment to establish advanced or specialized training programs in industrial companies.

The Mission recognizes that many of the problems of the Egyptian vocational training system are complex and need to be more closely examined. Past studies, though valuable in many ways, did not (or perhaps could not) address specific problems which may now exist. Since the Egyptian economy, and managerial methods of dealing with it, are still rapidly changing, gaining clear definite articulation of need is often difficult. The project recognizes this problem and is designed around the best available information concerning vocational training needs. However, it also recognizes that much information about industry needs and the PVT system must still be generated and acted upon. Rather than wait for studies to be designed and completed the project design has incorporated a dynamic needs assessment process which will become an essential element of problem identification and resolution. Furthermore, developing the project at this time recognizes that companies have immediate training problems that must be resolved. In essence, further problem definition will occur in an operational environment with a capability in the project to develop appropriate innovative responses to those needs or problems.

Relationships to CDSS. One of the key goals of the Mission's strategy during the 1982-86, period, as outlined in the CDSS, is the improvement of industrial productivity. The present project emphasizes the training of industrial workers to increase productivity. It will stress the strengthening of vocational training programs to reflect the needs of industry and provide assistance to employers in developing company specific training programs. Mission investment strategy will emphasize private sector, especially medium and small scale, establishments. Consistent with this strategy, the Vocational Training for Productivity project will emphasize upgrading labor skills in the private sector (as well as the public sector) and include an outreach component to deliver services to private and small scale establishments. And, since small scale establishments are generally more labor intensive than larger scale establishments, this should support the CDSS objective of encouraging labor intensive investments. The project will directly encourage the training and employment of women in the skilled trades.

B. Recommendations:

USAID/Cairo recommends that AID/W approve a grant to the Government of Egypt in the amount of \$17.5 million to support the Ministry of Industry's efforts to increase the relevance of its institutional training programs and strengthen in-plant training. This grant will be used to provide technical assistance, train Egyptian participants and purchase commodities.

USAID/Cairo recommends that, subject to the availability of funds, monies to support this project be fully obligated in 1981.

USAID/Cairo recommends that a determination be made under Section 612(b) of the Foreign Assistance Act of 1961, as amended, to permit dollar financing of local costs. This waiver is requested because the anticipated supply of U.S. owned Egyptian currency will not be sufficient to meet the requirements of this project and other obligations of the United States Government in Egypt.

Part 2: PROJECT BACKGROUND AND DETAILED DESCRIPTION

A. PROJECT BACKGROUND.

In 1974, Egypt began moving away from the reliance on centralized control of its economy that had dominated its approach to development for two decades. Since then, the government has given a growing role to market forces and encouraged private investment by both Egyptians and foreigners. AID's country strategy supports these efforts. Overall AID investment strategy for the 1981-1986 period emphasizes increasing economic growth while preserving the generally favorable patterns of distribution of available income and services which Egypt has achieved.

Much of Egypt's economic growth in recent years has been the result of exogenous factors such as worker's remittances, a rise in the production volume and export price of oil, the infusion of large amounts of foreign aid, and the "rediscovery" of Egypt as a tourist destination. Returns on present capital plant -- both productive plant and infrastructure plant -- remain low. Industrial establishments are generally operating below design capacity, their productivity is low by almost all measures. However, the GOE is aiming at a 9-10 percent annual rate of growth in the industrial sector during the next several years. Recent Mission analyses have concluded that within the Egyptian economy, the industrial sector offers the greatest potential for increased growth and employment. The Mission, therefore, places particular importance on the improvement of Egyptian industrial efficiency. AID's investment portfolio is aimed at improving industrial efficiency in a variety of ways: replacing worn out elements of capital plant; shifting production technology to a higher base; improving the range of financial instruments that support production; and making well-targeted inputs into key management areas of important parts of the productive sector. The strategy recognizes that productivity of a firm is a function of many different variables including availability of capital, application of technology, effective managerial systems and sub-systems, and appropriate skill levels of workers. Therefore, in order for a firm to raise productivity levels it must have access to and use a variety of complementary services that influence these variables. Basically, this reflects a "system" view toward the concept of productivity in a firm. Furthermore, the AID investment portfolio emphasizes that projects related to productivity must provide services that are user oriented, i.e. that respond to the specific needs of companies. It is recognized that not all firms require all of the services in order to become more productive but a significant number do need at least one, most likely a combination of services. All of this suggests that productivity oriented projects, in order to have maximum impact, must focus on specific targets, be user oriented, and linked with mutually supporting projects.

With these characteristics in mind, the Mission has designed (or is in the process of designing) several projects to deal with the variables of productivity. For example, the "Management Development for Productivity" project works at the firm level to build a managerial system in a company which is able to identify and respond to problems limiting its productive

capacity; the "Industrial Production" project upgrades the technology base of public sector companies; and the "Industrial Technology Application" project assists Egyptian managers to choose appropriate technology and effectively make use of that technology. Other AID projects provide financial resources to private sector industrial companies.

Within this perspective, the Mission now wishes to address another impediment to productivity at the firm level: the competency level of workers who operate the technical equipment of a plant. Various studies (both formal and informal) indicate that worker productivity could be increased by providing appropriate skill training. The studies also suggest, however, that the accessibility to and acceptability of existing vocational programs are limited or irrelevant at best or non-existent at worst.

Currently, vocational training services in Egypt are conducted by twelve GOE ministries representing a loosely structured uncoordinated "system". Although conceptually the Mission believes it would be beneficial for the GOE to coordinate the system and perhaps restructure the organizational entities to make them more effective, the Mission also believes practically that the task would be complex and would not directly address the immediate needs of individual industrial firms to upgrade workers to resolve immediate problems.

Therefore, while not ignoring the need for eventual reform of the overall Egyptian manpower planning and vocational training system, the Mission has decided on an approach that directly impacts on industry and provides the opportunity to demonstrate effective application of appropriate instructional technology and management. This involved choosing a training sub-system with the following characteristics:

- o oriented toward both public and private industry (the constituency group at which other AID projects are aimed)
- o a staff amenable to change
- o an industrial curriculum with a strong practical base
- o a size which insures a reasonable chance for project success.

Using these criteria the Mission chose the Productivity and Vocational Training Department (PVTD) of the Ministry of Industry and Mineral Resources (MOIMR) as the most likely base on which to build a vocational capacity to respond to identified industrial training needs, especially specific company training needs. The Mission approach is to "work back" from the needs of industry and help strengthen the PVTD's capacity to respond to those needs. Although the PVTD is a good base to build upon, industry is critical of its present approach to training. Specifically, the current PVTD system suffers from lack of adequate linkage with the needs of industry, technologically outdated courses, inflexible programs, and excessive concentration on entry level training.

Since its creation in 1957, the PVTD has emphasized general vocational education of entry level workers as distinct from specific vocational training of employed workers. The in-plant work experience provided "apprentices" in their second and third years of training has not been adequately tied with general vocational training during their first year, nor has apprentice in-plant training been sufficiently designed to provide systematic continuing training. Although upgrading of employed workers has long been a component of the PVTD's program, it is presently so minimal that it has no real impact on industrial skills. One result of the emphasis of broad general vocational education has been a drift away from the realities of Egypt's changing industrial structure. The situation has been further aggravated by (1) the isolation of the PVTD vocational training programs from the substantial changes occurring worldwide in instructional technology; (2) the aging of its training equipment (much of it acquired as long ago as two decades); and (3) the inadequate industrial experience of PVTD instructors.

Although the PVTD emphasize practical training more than other training organizations, the Department has not been able to take full advantage of its position in the MOIMR and its industrial contacts, to build the flexible, innovative, user oriented training programs increasingly demanded by Egyptian industry since the mid-1970's. Nevertheless, because of its organizational location and industrial contacts, the PVTD is the logical entity to provide practical entry level vocational education in key industrial trades and support in-plant training activities relevant to Egyptian industrial development. But, to meet the needs of Egyptian industry, the PVTD will have to modernize all components of its programs and relate them better to industry's needs. The basic vocational education component should serve as the foundation for the development of specific training programs designed, in coordination with other elements of an industrial strategy, to increase the efficiency of industrial establishments.

Interviews with officials of the PVTD have convinced USAID consultants that the Department intends to overcome its current deficiencies and to become a flexible, possibly semi-autonomous organization, able to adjust its improved program to the changing needs of industry. Under various loan agreements with the World Bank and ADF, the PVTD's physical plant is being expanded and the equipment of the training centers upgraded. This presents a unique opportunity to update the management, technology, and programs of the PVTD and to orient them better to the industrial thrust of Egypt's economic development. This is the objective of the present project.

The following are general characteristics of the system toward which the PVTD wants to move, and that Egyptian companies would like to see it move:

- o close ties to industry;
- o ability to assist companies with their in-plant training programs;
- o courses operating with feedback from the manufacturing sector;
- o a problem solving orientation

- o placement of graduates in appropriate jobs and follow-up on their performance;
- o training programs that can be changed when field personnel report any shortcomings or when technology changes; i.e., focused on true needs of companies;
- o training environment that reinforces values and attitudes which are functional on the job;
- o competency based training using appropriate instructional methodology, taking advantage of recent advances in instructional technology; and
- o based on skill standards set in collaboration with industry and employing trade tests that can certify a worker's competency.

B. DETAILED DESCRIPTION

The project aims at improving industrial skills that have an important impact on industrial productivity. The project will strengthen the MOIMR's ability to equip entry level workers with skills required by employers, upgrade the skills of employed workers, respond to company specific training problems, and establish skill standards and tests. During the project, special attention will be given to assisting the private sector and increasing skilled employment opportunities for women.

1. Relationship of Entry Level and Upgrading Programs. The thrust of this project is to provide training services directly to individual companies while re-orienting the PVTD more toward this type of service. It is this type of training which will provide more near term results and meet the needs of companies, operating in a new competitive environment, to increase the productivity of their existing labor force. The project will not, however, ignore the need for entry level skills training and a significant part of the project is targeted toward upgrading that part of the system. The project will place entry level training in a more realistic perspective vis-a-vis the needs of Egyptian industry, and will use the entry-level vocational education facilities and programs as a base on which to build additional user oriented training activities.

2. Regional Approach. The Mission believes that projects in the industrial sector should be designed to provide services directly to the end user in the shortest feasible time. This approach is based on near term needs of Egyptian firms to adapt to new economic circumstances. The approach does not exclude the need to institutionalize the service capability within an organization, but rather recognizes that focusing exclusively on capacity building could delay the actual delivery of services to firms.

The design of this project reflects this view and intends to deliver vocational training services directly to firms while simultaneously building the capacity of the MOIMR/PVTD to continue service delivery. The project

design therefore is aimed at the regional level of the PVTD - the level closest to the end user, and the one most likely to respond to industry needs in the shortest possible time. Although the PVTD system is currently divided into ten regions, only two were selected in order to limit the complexity of the project and maximize its intended impact. However, the two regions chosen include one-third of the PVTD's training capacity and represent a good sample of national training problems. The project design will facilitate the movement of project elements to other regions when continuing evaluation indicates the appropriateness of that decision.

The two regions selected are Alexandria and the Middle Delta (see regional map, Annex J). Criteria used to select these regions were:

- o Region must have reasonably high visibility and be judged as having a high chance for success.
- o Region is located near industrial centers. Where possible industries are clustered according to process or product, i.e., food processing, shoe manufacturing, textile production.
- o The support base of industrialists (chairmen of companies) must be strong. Regional Consultive Council is active or interest exists among industrialists to form a council.
- o The region must have a relatively large private sector.
- o The number of training centers within a region must be manageable, but sufficient to be a good sample of problems.
- o The courses in the regional training centers are representative of the majority of courses offered in other regions (to facilitate replication of curriculum developed in primary regions).
- o Region should be experiencing or have potential for industrial growth.

3. The PVTD as a Semi-Autonomous Training Organization. The MOIMR/PVTD has indicated a desire to orient their organization more toward industry and remove some bureaucratic restraints by becoming a semi-autonomous organization financed by an employer payroll tax. The general models for such an organization generally cited are those of SENAI (Brazil), SENA (Columbia), and SENAT (Peru). Of course, these models will need to be modified for Egyptian circumstances, if the GOE decides to move in this direction. The project supports this shift in principle; however, it is primarily concerned with achieving results in the industrial sector and therefore will assist in the development of the organizational form which optimizes achievement of this objective. In essence, the project design embodies the organizational theory that structure follows function in which one should not necessarily select an organizational structure solely because it produced results in other

environments. Project resources (e.g., chief of party, management advisor and miscellaneous short-term consultants) include the capability to provide general and specific advice concerning appropriate training organizations.

4. Linkage Mechanism to Industry. The project recognizes the need for the end-user to have a voice in policy formulation and influence in managing an industry oriented vocational training system. Toward this end, the project design calls for the strengthening of an existing Regional Consultative Council system as a means to achieve industry participation. However, it is also possible that other mechanisms may exist (or may be created) which could achieve that same objective. Therefore the project anticipates some flexibility on this issue and recognizes that alternative organizational patterns may be evaluated and adopted by the end of the project life. The project does not attempt to impose predetermined solutions on the contractor team concerning the linkage mechanism to industry.

5. Linkage with other Projects. The project has been designed synergistically specifically with two other Mission projects aimed at improving industrial productivity, and is supportive of several other projects already designed or being planned. The vocational training program will depend, in large part, on these other projects to identify training problems in industry and to develop the awareness of managers as to the cost/efficiency aspects of industrial training. Similarly, the vocational training project will be able to assist other projects, such as Industrial Technology Application, achieve their objectives. It is recognized that industrial training cannot fully achieve its economic objective unless it is of an overall improvement in industrial practices and policies. It is also recognized that industrial training must be judged on a "cost-benefit" basis as are other industrial inputs. Although the vocational education component of the project can legitimately be based on broader calculations of social benefit, it still must be linked with employers skill requirements, and be supportive of the overall industrial strategy. Because of the significant potential gains from ensuring close program linkages among present and future projects aimed at increasing industrial efficiency, the Mission is exploring various mechanisms for achieving effective industrial project linkages. (Annex F presents more detail on linkages among the various projects)

6. Training of Women. One of the objectives of the project is to increase the employment of women in the skilled trades. Currently, employment of women in the skilled trades is limited to areas where the perceived female characteristics of patience and manual dexterity are required (e.g. ready made clothing). The PVTD has stated its willingness to increase training opportunities for women and the industrialists interviewed have a positive attitude toward increased female employment in areas not requiring heavy lifting or contact with dangerous materials. The contractor will be responsible for determining the potential opportunities for women in such skilled trades as electronics, fine mechanics, calibration, and automated equipment and helping the PVTD develop appropriate training opportunities. A program of placement and follow-up will be undertaken to maximize chances for women's employment success. (See Annex M for a more detailed discussion of women in Egyptian industry).

7. Impact on the Private Sector. Although precise data are not available, the PVTD estimates that a significant proportion of its graduates are employed in the private sector. The project is designed to increase the PVTD's impact on industrial skills in the private sector in several ways. First, the PVTD centers will provide training to private sector firms on an equal basis with public sector firms. This could include inaugurating evening classes open to any interested individual. Second, equally with public sector firms, private sector firms will be able to request special upgrading courses from the PVTD. Third, the project element aimed at training supervisors to be better trainers will be especially important for small private sector firms in which on-the-job training is particularly important. Fourth, the establishment of skill standards will facilitate private sector firms' hiring, wage determination, and allow employees of private sector firms to be certified regardless of whether these skills were acquired informally on-the-job. Fifth, private sector firms will have access to technical assistance in diagnosing specific training problems and developing appropriate in-plant training programs. Sixth, the project's outreach activities will make a special effort to inform private sector employers of the training services available from the PVTD and encourage their utilization (e.g., the PVTD will be able to provide training materials, training of supervisors, skills training, training of training directors, problem solving, etc.) Seventh, the private sector will be represented on the Regional Consultative Councils and through the Councils be able to make their needs known to the MOIMR and play a role in establishing overall training policy.

8. Instructor Salaries. Low salaries relative to skilled industrial wages have made it difficult for the PVTD to attract highly skilled industrial workers as instructors (or to fill other key positions). On the other hand, turnover of instructors has been minimal in recent years. While vacancies are high they have not increased significantly over the last 5 years, thus the PVTD has been able to maintain an acceptable overall instructor-trainee ratio, although it varies from trade to trade. Nevertheless, the PVTD's inability to attract highly skilled industrial workers as instructors has limited its sensitivity to industrial skill needs, employment standards and work procedures. Instructors without adequate industrial experience may teach well but still lack the ability to provide trainees with realistic authoritative training. In a sense, therefore, the second jobs held by most instructors, to the extent that such second jobs provide industrial experience, may enhance PVTD instructional relevance. This may, in part, offset the usually cited disadvantages of second jobs: divided instructor interest, limited instructional energy, and restricting willingness to teach courses outside normal working hours.

The relationship of salary levels to instructor skills effectiveness, and motivation is complex and will require careful study by the PVTD and contractor during the project's development. The Mission feels that suggestions of permanent across-the-board salary increases prior to such study would be premature. The PVTD does, however, plan to provide incentive payments to Egyptian instructors and other counterparts participating in the project and this should improve counterpart motivation and project implementation. However, incentives will not solve the fundamental

attractiveness of instructor jobs vis-a-vis industrial employment. The level and structure of instructors salaries and their impact on instructional effectiveness needs to be examined in the context of changing PVTD instructional objectives. In addition to salaries, other alternatives for increasing the collective industrial experience of the PVTD need to be evaluated. For example, selective bonuses might be considered for industrial experience and other desirable instructor characteristics. Other alternatives that should be examined in collaboration with Regional Consultative Councils and business groups such as the U.S.-Egyptian business Council, are industrial internships for PVTD instructors and schemes for seconding skilled industrial workers to training centers as instructors for special courses (e.g., upgrading instructors' technical skills, teaching short courses for employed workers, demonstrating techniques to apprentices, etc.).

Thus, while the Mission recognizes that salary levels in the PVTD may limit its present ability to attract and hold highly qualified industrial workers as instructors, it believes that, given the PVTD's recent personnel experience, the project can be successfully implemented without stipulating fundamental changes in salary structure and levels prior to the project's undertaking. However, it is also recognized that an important task of the PVTD, with the assistance of the contractor and Egyptian industrial employers, will be to determine the level and nature of industrial experience and skills necessary to make a revitalized PVTD training system effective and develop the appropriate mix of policies to ensure that the required instructional and related skills are available to the PVTD, consistent with its evolving programs, organization structure, and financial resources.

9. Project Strategy. The project will be implemented by a team of long term (504 person-months) and short-term (116 person-months) American vocational trainers and their Egyptian counterparts in the Ministry of Industry's Productivity and Vocational Training Department. The PVTD will select an American contractor who will provide technical assistance, arrange participant training and assist in the purchase of required commodities. General policy guidance will be provided by a Project Advisory Board made up of the Undersecretary of MOIMR for Productivity and Vocational Training (Chairman); senior staff members of the PVTD; and representatives of industry (public sector and private sectors) and other appropriate officials as determined by the Chairman. The Board will maintain close working relationship with the National Consultative Council for Training in the Industrial Sector. Linkage with industry in the pilot regions will be ensured by Regional Consultative Committees made up primarily of employers, but with PVTD staff, and other relevant government and public officials represented.

Although the project will be implemented in Alexandria and the Middle Delta, an effort will be made to extend positive experience to the entire country during the life of the project. To facilitate early propagation of results, more emphasis will be placed on continual evaluation and less on the establishment of a "model" then envisioned in the PID. For example, after revised curricula for selected priority trades are developmentally tested in a pilot training center and validated in the two regions, instructors in other regions can be trained in their use and provided with appropriate support systems to begin using the revised curricula independently of the regional

project. In contrast, it is likely that aspects of the project such as the development of an effective role for Regional Consultative Councils will need to be tested over a longer period of time and possibly modified substantially before being replicated by the PVTD in other regions. The project strategy foresees a key role for the central staff of the PVTD in the spread of positive experience to other regions; however, this will require the establishment of successful examples and the inclusion of national staff in the developmental activities in the pilot regions.

Most aspects of the project will be carried out in a series of overlapping activities. Because of the user oriented focus of the project, the critical first phase will be detailed analysis of industry's requirements and the assessment of the adequacy of existing PVTD programs to meet these needs. For example, before revising curriculum materials for a specific skill area, a careful task analysis will be conducted in industry and employers consulted about their needs. Or, before attempting to strengthen a company's training program, the company's specific circumstances and needs will be assessed.

The second major activity of the project will be the development and testing of new procedures, skills, and materials while maintaining close contact with employers in the two pilot regions.

The final stage of the project will cover planning for replication of positive experience on a national scale, and building key PVTD central capacities to plan and support such replication. This will involve transferring certain project activities such as instructor training to Cairo. But, successful experience in areas such as instructional materials and instructor training need not wait until the end of the project to be replicated by the PVTD, providing it does not distract from the complete development of the pilot region programs.

Thus, the project strategy emphasizes the following:

- o Training as a means of increasing productivity.
- o Linkage to other projects designed to strengthen the industrial sector.
- o Active involvement of employers in planning and circulating training programs.
- o A regional approach with propagation of successful experience as soon as feasible.
- o Careful analysis of industry's training needs as a basis of instructional programs.
- o Use of appropriate innovative instructional technology

- o Outreach to private sector firms and provision of training assistance to them.
- o Increasing training and employment opportunities for women in the skilled occupations.
- o Development of in-plant training programs.
- o Training of supervisors and training directors to be better trainers.
- o Building a self-sustaining technical and managerial capacity of the PVTD to respond to industries training needs.

#### 10. Project Program Areas

a. Entry Level Skills. The project will strengthen MOIMR Regional Training Centers' capability to provide entry level skills relevant to the needs of industry. This will be done through (1) analyzing entry level skill requirements in the principal skilled occupations; (2) modifying curriculum as necessary to reflect industry's needs; (3) developing appropriate instructional methodology; (4) preparing instructional materials, including visual aids (Emphasis will be placed on obtaining and modifying existing instructional materials, although new materials will also be developed.); (5) training instructors in appropriate instructional methodology and updating their industrial skills (Emphasis will be given to strengthening regional in-service instructor training.); (6) building the PVTD's institutional ability to respond technically and administratively to changing industrial training needs. Revision of trades will be scheduled by priority cycles and after validation in the pilot regions will be capable of being introduced nationwide by the PVTD. To facilitate the preparation and testing of instructional materials, a pilot school(s) will be selected for each skilled trade. The pilot school will provide facilities for training instructors and curriculum developers.

b. Training Employed Workers. Reliance alone on the relatively small flow of new entry level workers would require a long time to influence productivity. Therefore, the special focus of the project will be on improving the skills of employed workers. This will involve (1) improvement and extension of general upgrading training, both on the job and in regional training center special programs; (2) training of training directors and supervisors as trainers; (3) providing assistance in solving company specific training problems; and (4) assisting individual companies to plan and establish company training programs.

General upgrading training will be re-invigorated and both private and public sector firms encouraged to participate. The feasibility of providing upgrading programs for individuals (possible at night or late afternoon) will be investigated. An important objective of the project will be to strengthen the PVTD's capacity to provide accelerated skills training to individuals outside the apprenticeship framework, using innovative instructional technology.

One of the responsibilities of supervisors should be to plan and supervise the training of their employees in production related activities. The PVTD's Productivity Centers will play a key role in training supervisors in this aspect of their duties. In addition, industrial training advisors will work directly with training managers and supervisors in industrial establishments to improve training programs. Supervisors, training directors and other appropriate company officials will be selected for participant training programs designed to expose Egyptians to effective in-plant training programs in the United States (and possibly other countries).

It is expected that company-specific training problems will be referred to the PVTD from a variety of sources including activities of related projects, especially "Management for Productivity" and "Industrial Technology Application Project". Another source of problem identification will be the management training programs of the Productivity Centers. In addition, the outreach program operated by industrial training advisors and PVTD staff should not only identify specific training needs but also encourage employers to take advantage of the services offered by the PVTD.

The contractor will assist the PVTD to work out procedures for responding to specific training problems. However, for illustrative purposes, procedures might be as follows: The problem might first be analyzed by the PVTD staff (for example, an industrial training advisor, a member of the Productivity Center staff, or a technical instructor) and the first line supervisor (or other appropriate management official). Together they would prepare a training prescription for approval of the training director (or other appropriate company officials), which in most instances would be implemented by PVTD regional training centers. Upon completion of the prescribed training, the supervisor would be responsible for ensuring that proper procedures were followed in production. The Productivity Center would be responsible for a follow-up evaluation to determine if the original problem had been resolved and, if necessary, make additional recommendations.

In the course of the project's outreach program, the contractor and the PVTD will have the opportunity to identify industrial firms with facilities and expertise that could be developed into advanced or specialized centers of training for their own and other firms employees. Establishing such specialized centers will probably require technical assistance, staff training, and commodities. If the establishment of such centers is determined to be feasible, the contractor will assist the PVTD to establish at least two pilot company specialized training centers. Because of the importance of the textile industry in the pilot regions, it is likely that one of these training centers would serve as an advanced center for training key textile workers.

c. Strengthening PVTD Management. The contractor will work with the MOIMR/PVTD to determine how the organization's structure and skills could be strengthened to improve the delivery of relevant skills to industry at least cost. This will involve evaluation of organizational structure, functions, procedures, staffing patterns, internal staff development, relationships with other policy making agencies, etc. Emphasis will be given to strengthening the PVTD's ability to manage a decentralized user-oriented innovative

vocational training system. The contractor will work with the PVTD to assure that its overall instructional system design is internally consistent and yet incorporates the variety of positive experience resulting from the many sources of capital and technical assistance being provided the PVTD.

Of special importance will be the strengthening of the PVTD's follow-up system so that the appropriateness of training programs can be kept under continual review. The focus of this follow-up will be the user oriented training systems being established in the two pilot regions. The role of the Regional Consultative Councils will be examined carefully in this context and specific actions taken to strengthen the voice of employers in planning and implementing training policy. The Regional Consultative Councils are expected to play an important role in linking the training activities of the PVTD more closely with the needs of industry. Although their role will be advisory, they should be able to influence PVTD training policy through their recommendations, participation in planning, and review of programs. The Regional Consultative Councils will also be the umbrella organization under which skill committees are organized to work with the PVTD in drawing up skill standards for individual trades.

Although the major focus of the project will be regional, attention will be given to strengthening the PVTD's central capability to support regional activities, to assess the implications of the pilot region experience for the national PVTD system, and to plan for the propagation of successful experience to other regions. With the assistance of the contractor, the PVTD will decide what activities are best conducted centrally (say, instructional materials production) and what activities may best be decentralized. The contractor will also work with the PVTD to assess the management implications of alternative instructional technologies and policies. For example, if it were determined that apprenticeship courses should be of varying length, or partially self-paced, management structure and procedures would need to be modified accordingly.

d. Skill Standards and Trade Tests. The contractor will assist the PVTD to develop illustrative skill standards and trade tests for each of the trades for which a curriculum is developed. This activity, which will build on task analysis and other project elements, will be done in collaboration with industrial employers. It is expected that the Regional Consultative Councils will sponsor the establishment of special committees for each skill area, composed of PVTD technical staff, expert workers (foreman) and other employer representatives with the assistance of project technical advisors. Each committee will draw up proposed skill definitions and skill standards for its specialty and submit them to the Regional Consultative Council. The Council will solicit broad employer review and approval. When the proposed standards are approved by the Councils, the contractor will assist the PVTD to establish appropriate tests to allow individuals to be certified at various skill levels. Procedures and facilities (probably the PVTD Centers) for administering tests and granting certification will be established.

The training programs of the PVTD will be able to be linked with the certification system by equating training objectives (competency

measures) with appropriate skill standards. Graduates of PVTD training programs can be certified at their achieved skill level facilitating employers' hiring and enhancing their trust in PVTD training standards. This should help raise employers confidence in training programs. In addition to PVTD graduates, workers who have learned their skills on the job will be able to have their skill level certified by passing appropriate trade tests.

It is anticipated that the regional experience in establishing skill standards and tests will provide useful information for building a national system of standards and tests. The Regional Consultative Councils' links with the National Consultative Council for Training in the Industrial Sector, as well as the MOIMR itself should provide the administrative mechanism for expanding the regional experience to the national level. As with several other project components, the PVTD and contractor will have the option of propagating regional experience with standards and tests as soon as that experience is of general applicability. The expansion and acceptance of skill standards beyond the industrial sector will require the collaboration of other ministries as well as Egyptian worker groups.

e. Relating Project Experience to Total Egyptian Vocational Training System. Finally, the project will include a small component, which will be programmed directly by AID in consultation with the GOE, to study a number of vocational training issues broader than the specific thrust of the project, but supportive of it and based on its experience. Earlier in the paper, the complex problems of the Egyptian Vocational Training System were pointed out. Also indicated were the reasons for going forward with the present project now without directly addressing questions of overall national vocational training policy.

Although the present project has not been designed to be a model for other training organizations, it is expected that because of its size, developmental nature and innovative instructional objectives, its implementation will raise broad questions, pose policy problems, and illustrate techniques that should be of interest beyond the immediate project environment. This component of the project is designed, therefore, to address the broad problems and opportunities revealed or generated by the project without distracting the contractor and the PVTD from the project's principal activities.

The following areas of potential consultation are illustrative:

- o What are the major implications of the PVTD's new instructional system design for other training organizations?
- o How could national manpower policy (civilian and military) better support the vocational training programs of the PVTD (and other training organizations) and vice versa?
- o Can (and, if so how) vocational training be better coordinated among training organizations?

- o In what occupations is a national system of skill standards and tests feasible and what has been learned from project experience in this area?
- o Does experience from the project's programs for training women have significance for other training agencies?, for human resources development policy?
- o What significance do the results of the project's programs have for small rural industrial establishments? artisinal training?
- o Do techniques developed for following up trainees and assessing the impact of their training have implications for other training organizations? for evaluating the effectiveness of other training programs?

It is important to emphasize that what is proposed is not a series of academic studies (although some may be helpful) but a policy-oriented response mechanism for (1) assessing and, where appropriate, taking advantage of "targets of opportunity" raised or revealed by the project's implementation, (2) identifying problems and policy solutions outside the PVTD sub-system required to make the PVTD's programs more effective, and (3) spreading positive project experience to other training organizations.

### C. Project Outputs and Inputs

1. Outputs: At the end of the project, the PVTD should have the technical and managerial capability to propagate, manage, and update the positive experience gained in the pilot regions to the rest of Egypt. As a result of the project, the PVTD's curricula and instructional technology should be efficient, flexible and relevant. Institutionally, the PVTD should have the capability at the end of the project to --

maintain a program of training relevant to employers changing skill requirements;

incorporate improvements in training technology when relevant to Egypt's circumstances; --

both without substantial outside technical assistance.

Specific project outputs include the following:

- o Updated curricula and instructional materials for approximately 20 courses.
- o Approximately 250 instructors upgraded in pilot regions.

- o 18 regional training center programs analyzed and strengthened to meet local needs.
- o Standards and skill tests prepared for approximately 20 trades.
- o At least two company training centers developed to provide specialized and advanced training in pilot regions.
- o Approximately 100 public and private sector industrial establishments assisted in establishing company training programs.
- o Approximately 100 public and private sector industrial establishments helped to solve specific production related training problems.
- o Productivity center program developed for training industrial supervisors (and training directors) in industrial training programs for productivity.
- o Revised instructor training curricula and materials reflecting regional experience.
- o Development of central instructional materials production center in ITI, supported by appropriate regional and training center capabilities.
- o Mechanisms for linking the PVTD with industry's skill needs, including:
  - Regional Consultive Councils
  - Outreach program
  - Follow up surveys
- o Management Information System for PVTD in place
- o Approximately 40 PVTD staff (excluding instructors) trained in the U.S. and 50 in Egypt.
- o 50 industry staff trained in the U.S. and approximately 200 in Egypt (in their own establishments and in the Productivity Centers).
- o Increased training and employment of women in the skilled trades.
- o Private sector training capability improved, both in plant and through improved access to PVTD programs.
- o Plan for propagation of Regional experience to Cairo and rest of Egypt.
- o Regional Consultative Councils in the pilot regions capable of determining employers' needs and linking these needs with development of appropriate programs and policies by the PVTD.

- o A better understanding of policy, organizational, and procedural changes that are required to improve the entire Egyptian vocational training system.

2. Inputs: The project's principal means of implementation will be technical assistance. Participant training and commodities will also be provided.

a. Technical Assistance. The principal instrument for achieving project objectives will be technical assistance. This assistance, valued at \$5,350,000, will incorporate elements of training; demonstration, and advice.

<u>LONG TERM</u>	<u>ADVISORS</u>	<u>PERSON MONTHS</u>
Administration Specialist (Chief of Party)	1	48
Training Management Specialist	1	48
Instructor Training Specialist	2	72
Curriculum Specialist	2	72
Audio-visual Media Specialist	1	36
Instructional Materials Production Specialist	2	72
Test and Certification Specialist	1	24
Industrial Training (OJT) Advisor	3	108
Job and Task Specialist	<u>1</u>	<u>24</u>
TOTAL	14	504

Operationally the above technical assistance will be clustered in several packages: (1) analysis of industrial training needs; (2) establishment of industrial competencies and skill standards; (3) design of appropriate curriculum and instructional materials; (4) instructor training; (5) in-plant training assistance; and (6) management.

Assistance covering technical subjects will be concentrated, to the extent possible, in the early years of the project and management/administrative assistance will be spread over the life of the project.

The technical advisors will initially serve in the two pilot regions; however, it may be most practical for the bulk of the team to be located in Alexandria while servicing both pilot regions. Advisors will have counterparts drawn from PVTD national (e.g., the Instructor Training Institute) and local offices, as well as selected industrial plants (training directors). After sufficient experience accumulates (for example, in preparation of instructional materials) it is expected that some advisors will shift to the Instructor Training Institute in Cairo where certain central services will eventually be located. (See Annex A for more details on technical assistance.)

In addition to technical assistance for direct project implementation, approximately 20 months of expert consultancy will be available for direct programming by AID/Cairo to relate project experience to the total Egyptian vocational training system.

b. Participant Training. Participant training, valued at \$1,695,000, has been designed to supplement the project's main training thrust in Egypt. There will be two components: (1) short-term observational training of industry training directors and managers aimed at providing a better understanding of how successful company training programs can be organized; and (2) upgrading of PVTD staff in areas such as task analysis, curriculum design, training materials production, industrial training techniques and setting trade skill standards.

PARTICIPANTS TO BE TRAINED IN THE U.S.

<u>POSITION/SPECIALTY</u>	<u>NUMBER</u>	<u>PERSON MONTHS</u>
Instructor Trainers	4	24
Curriculum Designers	2	20
Technical Information & Documentation	2	12
Audio Visual Application	2	20
Instructional Materials Development	2	20
Job Analysis, Testing and Classification	2	20
On-the-Job-Training	4	40
Industrial Safety	2	12
Company Training Officials	50	100
Training Administration (short-term)	8	24
Training Administration (long-term)	2	24
Aptitude Testing and Guidance	2	12
Miscellaneous	<u>25</u>	<u>75</u>
<b>TOTAL</b>	<b>107</b>	<b>403</b>

(See Annex C for more details on participant training.)

c. Commodities. Commodities, valued at \$1,860,000, will include industrial training equipment and supplies, audio-visual equipment, and vehicles. Commodities will be purchased to supplement PVTD inventories when required on the basis of industrial task analyses. Although new PVTD regional centers are being equipped and existing centers re-equipped with World Bank/African Development Fund loans, such equipment may not adequately reflect current industry equipment inventories and required worker competencies. Therefore, the detailed task analyses to be conducted under the project may reveal equipment gaps that will need to be filled prior to completing curriculum materials. Such equipment will be obtained for the pilot regions by the contractor or through a procurement services agent to avoid delay in

implementing curriculum changes. It is understood that the PVTD will arrange for the purchase of additional equipment necessary to replicate the regional equipment inventory on a national level (there may, however, be some slight difference in regional inventories reflecting differences in local conditions, but these should not be substantial of the entry level).

A second need for industrial training equipment will be to upgrade training facilities of at least two participating company training centers to be selected by the contractor and the PVTD after a survey of opportunities to develop specialized/advanced training centers in existing companies. Should the experience gained in the regional company training centers lead to the establishment of additional company training centers outside the pilot regions, the additional equipment for these centers would be purchased by the MOIMR.

Consistent with creating an innovative instructional system design, the project envisions substantially improving the instructional materials, including audio-visual materials, available in the regional training centers and, therefore, funds have been included for production/purchase of such materials and the equipment to produce audio-visual materials and use them in the classroom and on the shop floor. Funds are included for additional expendable work material (as wood and metal) to allow greater emphasis on practical training exercises. Funds are also included for providing training materials to companies cooperating in OJT programs.

Finally, a number of vehicles will be purchased, to provide the mobility necessary to work with numerous dispersed centers and employers. (See Annex B for more details on projected commodity purchases)

3. Input Costs. The following table summarizes the estimated costs of the various project inputs by year, and their distribution by major project outputs.

TABLE 1  
COSTING OF PROJECT INPUTS/OUTPUTS:  
VOCATIONAL TRAINING FOR PRODUCTIVITY  
Project 263-0062  
 (All figures in US \$000 s)

<u>INPUTS</u>	<u>OUTPUTS</u>	<u>PVTD</u> <u>TECH./MGMT.</u> <u>CAPABILITY</u>	<u>PVTD</u> <u>REGIONAL</u> <u>TRNG. CENTERS</u>	<u>COMPANY</u> <u>TRAINING</u> <u>PROGRAMS</u>	<u>SKILL</u> <u>STANDARDS</u> <u>&amp; TESTS</u>	<u>TOTAL</u> <u>OUTPUTS</u>
<u>AID</u>						
<u>Contract Costs</u>						
Personnel Services		658	2,276	1,878	538	5,350
Participant Trng.		263	687	610	134	1,694
Commodities		-	1,135	632	93	1,860
Miscellaneous		80	332	278	60	750
Over Head and Fee		<u>413</u>	<u>1,275</u>	<u>1,020</u>	<u>274</u>	<u>2,982</u>
Total Contract		1,414	5,705	4,418	1,099	12,636
<u>Other Costs<sup>1/</sup></u>						
Evaluation		12	13	22	7	54
Spec. Consultants		<u>115</u>	<u>25</u>	<u>50</u>	<u>10</u>	<u>200</u>
Total Other		127	38	72	17	254
Sub-total AID		1,541	5,743	4,490	1,116	12,890
<u>Contingency<sup>2/</sup></u>		114	426	333	83	956
<u>Inflation<sup>3/</sup></u>		<u>436</u>	<u>1,628</u>	<u>1,273</u>	<u>317</u>	<u>3,654</u>
Total AID		2,091	7,797	6,096	1,516	17,500
<u>GOE</u>						
<u>Other Costs<sup>1/</sup></u>						
Personnel Services		680	1,730	820	170	3,400
Office Space		9	9	9	9	36
Miscellaneous		<u>29</u>	<u>50</u>	<u>104</u>	<u>25</u>	<u>208</u>
Sub-total GOE		718	1,789	933	204	3,644
<u>Inflation<sup>4/</sup></u>		<u>366</u>	<u>911</u>	<u>475</u>	<u>104</u>	<u>1,856</u>
Total GOE		1,084	2,700	1,408	308	5,500
PROJECT TOTAL		<u><u>3,175</u></u>	<u><u>10,497</u></u>	<u><u>7,504</u></u>	<u><u>1,824</u></u>	<u><u>23,000</u></u>

<sup>1/</sup>IE, Non-contract costs. <sup>2/</sup>A contingency rate of 7.5 % was used. <sup>3/</sup>An inflation rate of 10% (compounded annually) was assumed. <sup>4/</sup>An inflation rate of 17% (compounded annually) was assumed.

Part 3: PROJECT ANALYSIS.

A. Social Benefit Incidence.

The major justification for this project is its contribution to raising industrial productivity. Gains from improved and more specific vocational training will accrue to society through increased economic efficiency and increased individual income. The project will also have significant direct impact on several social groups. The largest benefitting group will, be the general population. Increased industrial productivity should contribute to economic growth, political stability, and increased quality of life. Consumers should benefit from lower prices than would have been possible without productivity gains. To the extent that higher productivity increases the competitiveness of exports and foreign exchange earnings, this will allow higher levels of social infrastructure construction, dependent in part on foreign exchange.

A second broad group that will benefit from this project will be industrial workers. They will benefit directly from training and indirectly from higher wages and, if lower prices expand demand sufficiently, from more jobs. The project's industrial safety training component should help make the industrial environment safer for workers. Because, the project will develop model skill standards, workers who have acquired skills on-the-job, frequently the least educated, including women, will be able to obtain certification in these skills. This should increase their employability and wages.

Employers should also benefit from this project by obtaining better trained entry level workers and getting help in improving the skills of employed workers. Higher labor productivity should eventually result in higher profits. Private sector employers, especially those in small scale industrial production, should gain from this project by obtaining access to training resources that have not previously been available to them at costs they could afford.

A fourth group to benefit from this project will be the trainees, both entry level and advanced, who will be able to acquire more relevant and marketable skills. While a detailed study of trainee characteristics does not exist, available information does indicate that PVTD trainees come from low income families and score low in academic tests. Thus, to the extent that improved skills raise wages of training graduates (as well as their productivity), the project will be of special benefit to relatively low income earners. The project will emphasize increasing training opportunities for women and they, therefore, should benefit significantly from this project.

Finally, the staff of the PVTD and industrial establishments who receive training, either in Egypt or overseas, will gain from this project.

B. Technical Feasibility.

The project does not rely on new or complicated technologies. It attempts to transfer recent but tested instructional technology, readily available in

the United States to the PVTD vocational training system. The PVTD has a good technical base developed originally with the assistance of the International Labor Organization (ILO). However, since the end of the ILO project, the PVTD has had only limited access to western instructional technology and, therefore, has been unable to take advantage of significant advances in training techniques. The World Bank and the African Development Fund are now implementing projects to assist the PVTD expand and re-equip its training facilities. Therefore, the provision of technical assistance, training and supplementary commodities will occur at a time when the PVTD's physical plant is being renovated, providing a good physical framework in which to introduce new instructional technology.

The PVTD programs have also suffered in recent years from inadequate linkages with industrial employers. One of the principal objectives of the project is to improve this linkage. The creation of Regional Consultative Councils, the expressed interest of employer groups, especially the U.S.-Egyptian Joint Business Council, the GOE's emphasis on a more efficient industrial structure, and the development of Mission supporting projects in the industrial sector provide a context within which the project can improve the relevancy of PVTD training and link it with other industrial inputs to improve productivity the Mission believes that a sufficient number of supporting activities are being developed to make the vocational training project timely and technically feasible.

C. Environmental Concerns.

There is no reason to expect any significant environmental impact to result from the project's implementation. During the PID review for this project it was determined that the project is exempted from environmental analysis by the provisions of 22 CFR 216.2(e) Categorical Exclusions (2) (1). (See Annex Q).

D. Economic Considerations

A combination of rapid economic growth and large migration of skilled workers to other Arab countries has resulted in a shortage of skilled workers. A recent study estimated that in the industrial sector alone the annual shortage of skilled workers may exceed 36,500 during 1979-84.<sup>1/</sup> Skilled workers are in short supply in virtually every area -- mechanical, electrical, textile, automotive, etc. This project is designed to relieve the economic bottleneck of skilled worker shortages in the industrial sector through improving the quality and quantity of industrial skills training.

An economic benefit-cost analysis based on the wage rate difference between skilled and unskilled workers shows that economic benefits exceed

<sup>1/</sup>William B. Clatanoff, Jr., "Manpower Projects for Education and Training", USAID, June, 1979.

economic costs by more than 4.5 times. This implies an economic rate of return of more than 350%.<sup>2/</sup>

Marginal Economic Benefit-Cost Considerations.

The PVTD annually graduates approximately 4,500 new skilled /semi-skilled workers. However, one of the major problems of the existing program is that the training provided has not been effective in elevating skills. Roughly speaking, the existing training program is estimated to be about 50% efficient. In other words, the graduates as a group acquire only about 50% of skill competencies for which training is provided. The result has been many graduates who are employed as "skilled" workers at higher wages without a real commensurate increase in skill levels. To remedy this problem, the project is designed to improve the relevance of instruction and curriculum materials to job requirements. This should improve the efficiency of training from 50% to between 75-100%. If the project achieves 100% efficiency the PVTD would graduate 4,500 entry level workers with improved skills, 5,000 accelerated skilled workers who are currently either unemployed or employed as unskilled workers, and provide retraining for 300 employed skilled workers. Not included in these estimates are several thousand workers who will receive various amounts of training on the job.

Because of the technical assistance provided under the project, worker productivity is expected to increase after the training. This increase in worker productivity is the economic benefit to the Egyptian economy attributable to this project. The wage rate differential before and after receiving skill training is an appropriate proxy for quantifying the productivity increase. The pre-training wage base can be approximated by agricultural wages and the post training wage can be roughly measured by craftsman wages. Using these wage levels as proxies and assuming a 25 year working life for graduates, the present value in 1982 of economic wage benefits discounted at 5% per annum is \$138.87 million.

Project economic costs, on the other hand, are estimated at \$34.83 million. Economic costs are based on a shadow exchange rate of \$1.00 = LE 0.90. The total cost consists of \$16.68 million of the proposed project, \$7.7 million of IBRD funds for new equipment, and \$10.45 million for additional PVTD operation and maintenance expenses during the life of the equipment and curriculum materials. The instructional materials and equipment are assumed to last for 10 years from the time of the project completion. The present value in 1982 of economic costs discounted at 5% is \$30.74 million. The ratio of the present value of economic benefits to economic cost is more than 4.5.<sup>3/</sup> Table 19 Annex H, provides economic cost and benefit flows during the period of this project, 1982-1995. This project obviously merits funding on economic grounds.

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<sup>2/</sup>It should be noted that while the methodology is appropriate, gaps in available data leave no choice but to make some assumptions in estimating the rate of return. The assumptions are spelled out in Table 19 (Annex H).

<sup>3/</sup>At 75% efficiency this benefit-cost ratio becomes 3.7.

E. Administrative and Financial Feasibility

Administratively the project is viable. The PVTD has existed since 1957 and currently has a staff of over 4,000 persons. It operates the Instructor Training Institute, 36 regional training centers and is associated with ten in-plant training centers in the public sector. Current enrollment is over 16,000. The key administrative staff members of the PVTD are relatively well-trained professionals with good commitment to their profession. Turnover of key PVTD technical staff, other than normal attrition, is minimal. The Minister, the Undersecretary, and senior PVTD staff are aware of the need for a revitalized program oriented closely to the needs of the industrial sector. The Mission believes that the MOIMR in general, and the PVTD in particular, have the capacity, with USAID assistance, to negotiate and manage the contractual services required to implement the project.

Financially, the project is viable. The PVTD has been operating with its own budget (L.E. 6.1 million in 1980) for more than 20 years. No new entities are being created. The project will incorporate the Instructor Training Institute, eighteen training centers in Alexandria and the Middle Delta, all of which already exist and are supported by the actual and projected PVTD operating budget. New training centers being constructed with the assistance of the World Bank and African Development Fund will require increased operating expenditures, but these have been determined to be available by the World Bank. It is expected that any additional equipment required to expand the project's experience to other regions of Egypt will be requested from the World Bank in its Fourth Educational Loan, now being planned.

Very little of the AID input is for recurrent costs that must continue beyond AID involvement. The GOE contribution to the project represents some small increase in the budget of the PVTD during project implementation but will create relatively small recurrent costs well within the capability of the GOE to carry. Projected increases in recurrent expenditures (excluding overall salary changes) to operate a rejuvenated national system based on the improvements developed in the pilot regions should not exceed 5 percent of the PVTD 1980 budget.

Continuing costs consist of maintenance costs for additional shop and audio-visual equipment, salaries for a small number of additional staff, additional expendable shop materials, costs for additional printed and visual instructional materials and greater transportation costs to allow PVTD staff work with individual employers. Maintenance of training equipment is, for the most part, done by technical instructors. Costs of printing increased amounts of instructional materials can be held to a minimum through use of PVTD printing training facilities. Existing personnel can be trained to maintain new audio-visual equipment. It may also be possible to identify present employees who may be freed to undertake new tasks without replacing them, thus avoiding any employment increase. The cost of increased use of expendable training materials for more practical training will be the largest part of increased costs but still represent a very small addition to the total PVTD budget. Transportation cost increases, largely for gasoline and vehicle maintenance, will be minimal.

The Special Fund generated by accumulation of counterpart funds from CIP loan reimbursements is to be used to finance staff incentives for PVTD staff working on the project. Access to this will end with the project. It is assumed that by the time the project is over the GOE will have determined an appropriate salary structure (see Part 2, Section B.9) and developed appropriate financing (if that is determined to be necessary) through one or a combination of the following: a payroll tax, fees for services, and direct GOE budget allocation.

A small proportion of increased operating costs may eventually be recovered by assessing employer charges for things such as instructional materials. The GOE is presently studying an employer payroll tax to finance vocational training. If implemented, this tax would be available to cover additional operating costs. However, because of the small increase in operating costs envisioned by this project, even if the payroll tax is not approved the GOE will be able to cover additional operating expenses. As a covenant in the Project Agreement, the GOE will provide all necessary resources for new and on-going operating expenses.

Part 4: IMPLEMENTATION PLANNING

A. Administrative Arrangements.

The PVTD will coordinate overall project activity and have full responsibility and authority for project implementation. The PVTD will obtain the services of a U.S. contractor to provide the technical assistance, participant training and commodity inputs required to implement the project. The PVTD will (1) develop a pre-qualification notice, evaluate submissions and compile a short list of qualifying firms; (2) develop and issue a Request for Proposals (RFP) to firms on the short list; (3) establish criteria upon which basis the proposals will be evaluated; (4) evaluate the proposals received in response to the RFPs; (5) negotiate and sign a contract with the firm which has the highest ranked proposal. These contracting tasks will be accomplished in accordance with established USAID host country contracting procedures.

Overall policy direction of the project will be provided by a Board of Directors chaired by the Undersecretary for Productivity and Vocational Training. The Board will consist of key PVTD officials, representatives of the industrial sector, both public and private, and other appropriate officials as designed by the PVTD. The formal establishment of the Board is a Condition Precedent to the initial disbursement of USAID funds.

The principal responsibility of the contractor will be to advise and assist the PVTD. The specific services to be provided by the Contractor shall, therefore, be determined by the PVTD. It is intended that the project implementation be both innovative and flexible. As pointed out earlier in the paper, the project will incorporate a dynamic needs assessment. Therefore, the PVTD, in consultation with AID, will be able to modify the scope, timing and level of technical assistance as required by evolving project experience. The following scope of services is, however, presented for illustrative purposes.

1. Provide the technical assistance required under the terms of the contract.

2. Develop, in coordination with the PVTD, detailed work plans for each contract team member (specialists, advisors and consultants) at least 30 days prior to their arrival in Egypt. Each plan will specify the quantitative and qualitative objectives of the individual's services and identify specific counterpart arrangements.

3. Prepare a detailed implementation plan. The plan will cover all project components and will: (1) identify specific implementation targets or objectives; (2) identify actions required to achieve those targets or objectives; (3) fix responsibility for initiating and completing each required action.

4. Develop an appropriate participant training plan in collaboration with the PVTD.
5. With the PVTD, develop and implement an administration plan for a more effective and more decentralized training system.
6. Develop detailed course designs and appropriate instructional materials.
7. Design and develop an outreach program to make employers (especially small employers) aware of the PVTD resources.
8. Determine commodity needs in coordination with PVTD staff and write detailed specifications. Procure, and install equipment.
9. Assist the PVTD to help industrial companies to design and implement in-plant training programs.
10. Assist the PVTD to help industrial companies to solve company-specific training problems.
11. Assist the PVTD to expand training opportunities for women.
12. Assist USAID and the PVTD in regular project evaluation exercises.
13. Submit periodic reports as required by USAID and the PVTD.

The Project Agreement will be signed by USAID and Deputy Prime Minister Meguid plus Minister of Industry and Mineral Resources Zaki representing the PVTD.

The USAID/Cairo Director of the Office of Education and Training, or his designee, will have USAID project management responsibility. Day-to-day monitoring of the project will be accomplished by the appointed USAID Project Officer. It is anticipated that, during the period between the signing of the Project Agreement and the signing of the host country contract, an estimated 14 months, the Project Officer will be required to devote approximately 60 percent of his work time assisting the PVTD and the Board in the discharge of their responsibilities. Once the host country contract is signed, the percentage of the Project Officer's work time devoted to this project should drop to approximately 35 percent, as part of the advisory burden will fall to the contractor's Chief of Party. The USAID Project Officer will serve as the chairman of the USAID Project Committee consisting of representation from the Program, Economics, Legal, Industry, Controller, Training, Procurement and Division staffs. The Committee will assist the Project Officer in monitoring GOE performance in meeting Conditions Precedent and fulfilling covenants, in reviewing project implementation and in performance evaluation.

B. Implementation Plan

1. Schedule

An illustrative Implementation Schedule follows.

ILLUSTRATIVE IMPLEMENTATION SCHEDULE

<u>Item</u>	<u>Action</u>	<u>Responsibility</u>	<u>Target Date</u>	<u>Project Month</u>
1	ProAg Signed	AID/GOE	8/81	00
2	CBD Notice	AID/PVTD	9/81	01
3	C.P. s Met	PVTD	10/81	02
4	Early Participant Training Identified	AID/PVTD	10/81	02
5	English Language Training Started	AID/PVTD	10/81	02
6	Responses to CBD Notice Received	Proposers	11/81	03
7	Shortlist Prepared	PVTD	12/81	04
8	First Participants Leave for Training	AID/PVTD	12/81	04
9	RFP Issued	PVTD	12/81	04
10	Proposals Received	Proposers	3/82	07
11	Proposals Ranked	PVTD	4/82	08
12	Contract Signed	PVTD	6/82	10
13	First Contractor Team Members Arrive	Contractor	8/82	12
14	Second Group of Participants Leave for Training	Contractor/AID/PVTD	10/82	14
15	Organizational Assessment and Baseline Data	Contractor/PVTD	10/82	14
16	Regional Councils Oriented and Their Programs Planned	Contractor/PVTD	12/82	16

<u>Item</u>	<u>Action</u>	<u>Responsibility</u>	<u>Target Date</u>	<u>Project Month</u>
17	Implementation Plan Prepared	Contractor/PVTD	12/82	16
18	Training Plan Prepared for Remaining Participants	Contractor/PVTD	1/83	17
19	Women's PVTD Training Plan Prepared	Contractor/PVTD	1/83	17
20	Audio-visual Equipment Ordered	Contractor/PVTD	2/83	18
21	Industrial Task Analysis Begins	Contractor/PVTD	2/83	18
22	Industrial Outreach Begins	Contractor/PVTD	3/83	19
23	First Internal Evaluation	Contractor/PVTD	3/83	19
24	Women's Long-range Training Targets Set	Contractor/PVTD	6/83	22
25	Instructor Training Begins	Contractor/PVTD	7/83	23
26	Second Internal Evaluation	Contractor/PVTD	9/83	25
27	First External Evaluation	PVTD/AID	3/84	31
28	Third Internal Evaluation	Contractor/PVTD	9/84	37
29	Fourth Internal Evaluation	Contractor/PVTD	3/85	43
30	ITI Media Center Functioning	Contractor/PVTD	9/85	49
31	Second External Evaluation	PVTD/AID	9/85	49
32	All Curriculum Materials Completed	Contractor/PVTD	3/86	55
33	Participant Training Completed	Contractor/PVTD	3/86	55
34	Replication Plan Prepared	Contractor/PVTD	3/86	55
35	Fifth Internal Evaluation	Contractor/PVTD	3/86	55
36	All Equipment in Place	Contractor/PVTD	5/86	57
37	Final External Evaluation	PVTD/AID	8/86	60

2. IMPLEMENTATION PLAN NARRATIVE.

For implementation purposes the project consists of seven interrelated components.

- o Development of curriculum and instructional materials
- o Instructor training
- o Establishment of skill standards and trade tests.
- o Provision of training assistance to individual companies
- o Strengthening PVTD management system
- o Development of women's training programs
- o Relating project experience to total vocational training system.

The implementation objective will be to develop these components in a mutually supporting sequence that results in increased industrial productivity. The detailed implementation plan can only be worked out by the contractor after careful assessment of industrial and PVTD needs; therefore, the first action of the contractor will need to be the establishment of a detailed project implementation plan which will take into account the sequencing and timing requirements of the project.

Implementation will need to occur in several overlapping phases, as outlined in the section on Project Strategy (Part 2, B. 9). The bulk of project activity will occur in the two pilot regions. However, at an appropriate time, most likely late in the project, certain project activities will need to shift to Cairo. For example, the development of many audio-visual materials can most effectively be undertaken in the Instructor Training Institute in Cairo. Or, for example, the experience gained in training instructors in the pilot regions will have to be transferred eventually to the ITI in Cairo.

The following listings illustrate one possible sequencing of project activities.

Development of Curriculum and Instructional Materials.

- o Establish skill training priorities;
- o Regional Councils provide background information to regional employees and ask assistance;
- o Special committees of employers formed for each trade in first group of priority trades;
- o Task analysis of first group of trades conducted in selected establishments;

- o Required skill competencies identified and performance measures established;
- o Assessment of PVTD programs in first group of trades in relation to identified competencies;
- o Identify "developmental" training center for each priority trade;
- o Revise curriculum; obtain or prepare and developmentally test supplementary instructional materials;
- o Field test revised curriculum and instructional materials in pilot regions;
- o Revise materials based on field tests; and
- o Plan for national propagation.
- o Begin cycle for second group of priority trades, etc.

#### Instructor Training.

- o Assess instructor training needs;
- o Prepare instructor training curriculum and materials
- o Conduct general upgrading training of all instructors in pilot regions
- o Conduct specific training of instructors for first priority trades;
- o Conduct specific training of instructors for second group of priority trades, etc.;
- o Move instructor training advisors and counterparts to Instructor Training Institute in Cairo;
- o Assess role of ITI in national instructor training program and extent to which instructor training will be decentralized;
- o Develop plan for national instructor training program.

#### Development of Trade Skill Standards.

- o Form skill committees made up of employers (under umbrella of Regional Advisory Committees);
- o Establish standards;

- o Establish trade tests;
- o Validate tests;
- o Establish test program in pilot region (sponsorship of RAC).

Company Training Programs.

- o Prepare informational materials on PVTD resources
- o Visit industrial establishments in Regions, discuss PVTD resources, identify training areas in which PVTD can assist employer.
- o Conduct in-plant training assessments.
- o Provide assistance to employers in establishing company training programs.
- o Develop Productivity Center (P.C.) programs for training trainers and supervisors (as trainers).
- o Instruct P.C. staff in training programs.
- o Conduct first P.C. program for supervisors as trainers.
- o Select participants for overseas training.
- o Participants trained
- o Development of company specific training prescriptions and referral to appropriate training agency.

Management

- o Base line data collection
- o Establish PVTD Management Information System (emphasis on follow-up).
- o Draw-up Regional Consultative Councils program agenda and assess assistance required.
- o Assess PVTD management structure, resources, procedures, etc., required to support regional program.
- o Assess potential role of company training centers in Cairo
- o 31st month assessment and revision of project implementation plan as required.

- o Assess changes required in PVTD management structure and procedures based on regional experience.
- o Develop appropriate organizational structure, Mission statements, key job descriptions and operating procedures.
- o Develop plan for propagation of positive regional experience.
- o 49th month Assessment
- o GO/NO Go decision on replication plan.
- o Project TA staff moves to Cairo (possibly in phased stages).
- o Assist PVTD with operational planning for replication.

Development of Women's Training.

- o Identify feasible employment areas for expanding women's training programs (in collaboration with Regional Consultative Council).
- o Work with employers to determine areas where PVTD can assist in upgrading presently employed women.
- o Recruit women for pilot schools (priority trades, if feasible)
- o Train women in priority trades (pilot schools).
- o Recruit women for regional training program (priority trades)
- o Train women
- o Place women
- o Provide follow-up support and evaluation.
- o Establish long range plan for increasing women's participation in skilled training programs

Relating Project Experience to Total  
Vocational Training System

- o Establish means of informing GOE officials outside MOIMR of Project's progress.
- o Identify policy and other constraints to PVTD training system beyond control of PVTD.

- o Discuss constraints with GOE officials (e.g., The Higher Council on Vocational Training and Manpower) and determine the GOE's interest in investigating alternative arrangements.
- o Identify and analyze policy, organizational and procedural alternatives. Present suggestions to GOE.
- o Determine key lessons, techniques, materials, etc., developed by the project and make them available to other training organizations (and if necessary suggest appropriate modifications for other agencies).
- o Provide consultants for seminars (or other appropriate fora) to discuss various aspects of vocational training system (using project experience as a base) with a broad representation of Egyptian training officials.
- o Provide consultants to assist with studying and planning changes in the vocational training system, if desired by GOE.

C. Financial Plan

The total cost of the project is estimated at \$ 23.0 million. AID will provide a grant of \$ 17.5 million and the GOE will contribute a total of \$ 5.5 million or 24 percent of total anticipated costs.

The project funding period will be from November 1981 through August 1986. Table 1 "Summary Cost Estimates" and Table 2 "Financial Plan and Projection of Expenditures" at the end of this section show projected costs by specific input, by cost elements and by foreign exchange and local currency. The following tabulation summarizes projected costs by category and source of funding:

<u>Category</u>	<u>AID</u>	<u>GOE</u>	<u>TOTAL</u>
	In U.S.\$ 000's		
Contract Cost	12,636	-	12,636
Other Costs	254	3,644	3,898
Contingency	956	-	956
Inflation	<u>3,654</u>	<u>1,856</u>	<u>5,510</u>
TOTAL	<u>17,500</u>	<u>5,500</u>	<u>23,000</u>

A brief description of what each element includes within the above cost categories follows:

1. Contract Costs

AID contribution will cover the costs of an American contractor who will provide technical assistance, arrange for participant training and

purchase commodities and services. The estimated contractual costs for each of these elements follow:

a. Personnel Services: \$5,350,000

Personnel costs will be for 504 person months of long-term assistance and 116 person months of short-term assistance. Personnel costs will be clustered in training needs analysis, management, instructional materials development, instructor training, company training programs, curriculum development, and skill standards and trade tests. Estimated salaries (annual basis) range from \$20,000 to \$50,000. (See Annex A for a detailed description of technical assistance personnel.)

b. Participant Training: \$1,694,000

Participant training will include 403 person months of training for 107 individuals from the PVTD and the industrial sector (public and private). The areas of training will reflect and supplement the clusters of technical assistance and the project implementation plan. For purposes of this project paper, all participant training costs have been included in the above total; however, an effort will be made after the ProAg is signed to identify areas where training can begin prior to the selection of a contractor (and without the contractor's needs assessment) in order to accelerate project implementation. To the extent that appropriate pre-contract training can be undertaken, the contract amount for participant training will be reduced. (See Annex C for a detailed description of projected participant training.)

c. Commodities: \$1,860,000

Commodities to be purchased by the contractor for the PVTD will include:

	<u>In U.S.\$ 000 s</u>
Regional Training Center Equipment	325
Expendable Instructional Materials	170
Equipment for Company Centers	400
Equipment and Materials for OJT Programs	150
Audio-Visual Equipment	750
Vehicles	<u>65</u>
TOTAL	<u><u>1,860</u></u>

(See Annex B for a detailed description of commodity purchases)

d. Miscellaneous Costs

(1) Services: \$50,000

The contract will provide services in the U.S., and other countries as appropriate, to identify instructional materials (especially public domain materials) relevant to the PVTD's needs; negotiate copyright arrangements, if necessary; and arrange for shipment of materials to Egypt.

(2) Operating Costs: \$700,000

This amount will provide for translation services, local office support, and minimal contractor travel to and from the United States.

e. Overhead and Fee: \$2,982,000

For budgeting purposes the following rates and base were used for overhead and fee calculations:

	<u>Rate</u>	<u>Base</u>
Overhead	100%	Direct Salaries
Fee	10%	Total Contract Cost

2. Other Costs

a. AID

In addition to estimated contract costs, the project will provide: (a) \$54,000 for three external evaluations; and (b) \$200,000 for short-term special consultancy to be programmed by USAID/Cairo over the life of the project.

b. GOE

The GOE contribution to the project will be both financial and in kind as follows:

	<u>In U.S.\$ 000 s</u>
Personnel	
Salaries	1,700
Incentives	1,700
Office Space	36
Miscellaneous	208
Inflation	<u>1,850</u>
<b>TOTAL</b>	<u><u>5,500</u></u>

Salaries are for instructors and staff in the pilot region training centers, regional administrative staff, and instructor training institute staff who will be assigned to work with the contractor. Included in GOE personnel costs are incentive payments (100 percent of salary) for GOE staff assigned to the project. The PVTD is to devise a system and request financing from a Special Account held for this and other purposes by the GOE and funded by local currency repayments of CIP dollar loans. The incentive system will require Ministry of Economy and Mission approval for Special Fund Financing. Office facilities will be in kind - either already existing in Alexandria or rented as necessary to accommodate the contractor staff. Other operating costs include office supplies, gasoline, and vehicle maintenance.

### 3. Contingency and Inflation

The final cost category of the Financial Plan is a provision for contingencies and inflation. Table 1 reflects estimated costs to AID of \$4.6 million (contingencies \$1.0 million and inflation \$3.6 million) and \$1.9 million (inflation only) to the GOE. Rates applied in estimating these costs were as follows:

<u>Type of Cost</u>	<u>Rates</u>	
	<u>Contingency</u>	<u>Inflation*</u>
Foreign Exchange	7.5% of Project Cost	10% of Project Cost
Local Currency	7.5% of Project Cost	17% of Project Cost

\*Rates for inflation were compounded yearly.

Of AID's total allocation of \$17.5 million to this project, 65 percent will be expended during the third and fourth project years. Because of the timing of start up activities in the first two years of project implementation, expenditures for these years are expected to reach only \$3.5 million (20 percent of total AID project cost). In the fifth year, expenditures are projected to reach \$2.6 million (15 percent of total AID project cost). as technical activities taper off so that counterpart expenditure are expected to occur in an increasing level as follows:

<u>Project Year</u>	<u>Percent of Expenditure</u>
1 & 2	19.4
3	22.7
4	26.7
5	31.2

Table 1 of Part 2. C. of this paper presents the financing plan for the project by major output elements as a function of the input activities which contribute towards their generations. Unit inputs have been allocated to each output activity so that output budgeting and cost data can be controlled, accumulated and evaluated for project implementation and monitoring puposes. The analysis of the PVTD's administrative and financial capabilities for implementing the project is given in Part 3. E. of this paper. Cost-benefit analysis is included in Part 3.D., Economic Considerations.

Table 2  
SUMMARY OF COST ESTIMATES AND FINANCIAL PLAN  
PROJECT VOCATIONAL TRAINING FOR PRODUCTIVITY

	<u>(In US \$000 s)</u>		
	<u>K</u>	<u>LC</u>	<u>TOTAL</u>
<u>AID</u>			
<u>Contract Cost</u>			
Personnel Services	4,150	1,200	5,350
Participant Training	1,571	123	1,694
Commodities	1,860	-	1,860
Miscellaneous	69	681	750
Overhead and Fee	<u>2,982</u>	<u>-</u>	<u>2,982</u>
Total Contract	10,632	2,004	12,636
<u>Other Costs<sup>1/</sup></u>			
Evaluation	39	15	54
Special Consultants	<u>200</u>	<u>-</u>	<u>200</u>
Total Other	239	15	254
Sub-Total AID	10,871	2,019	12,890
<u>Contingency<sup>2/</sup></u>	806	150	956
<u>Inflation<sup>3/</sup></u>	<u>2681</u>	<u>973</u>	<u>3,654</u>
Total AID	14,358	3,142	17,500
<u>GOE</u>			
<u>Other Costs<sup>1/</sup></u>			
Personnel Services	-	3400	3,400
Office Space	-	36	36
Miscellaneous	-	<u>208</u>	<u>208</u>
Sub-Total GOE	-	3,644	3,644
<u>Inflation<sup>4/</sup></u>	<u>-</u>	<u>1,856</u>	<u>1,856</u>
Total GOE	-	5,500	5,500
PROJECT TOTAL	<u>14,358</u>	<u>8,642</u>	<u>23,000</u>

<sup>1/</sup> IE, Non-contract costs. <sup>2/</sup>A contingency rate of 7.5% was used.  
<sup>3/</sup>An inflation rate of 10% (compounded annually) was assumed. <sup>4/</sup>An inflation rate of 17% (compounded annually) was assumed.

Table 3  
ESTIMATED EXPENDITURES BY PROJECT YEAR  
VOCATIONAL TRAINING FOR PRODUCTIVITY

	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>	<u>PROJECT TOTAL</u>
<u>AID</u>					
<u>Contract Costs</u>					
Personnel Services	1,184	1,825	1,612	729	5,350
Participant Training <sup>1/</sup>	190	893	424	187	1,694
Commodities	683	662	475	40	1,860
Miscellaneous	188	192	185	185	750
Overhead & Fee	<u>681</u>	<u>1,037</u>	<u>870</u>	<u>394</u>	<u>2,982</u>
Total Contract	2,926	4,609	3,566	1,535	12,636
<u>Other Costs<sup>2/</sup></u>					
Evaluation	-	18	18	18	54
Special Consultants	<u>50</u>	<u>50</u>	<u>50</u>	<u>50</u>	<u>200</u>
Total Other	50	68	68	68	254
Sub-Total AID	2,976	4,677	3,634	1,603	12,890
Contingency <sup>3/</sup>	221	347	269	119	956
Inflation <sup>4/</sup>	<u>328</u>	<u>1,085</u>	<u>1,359</u>	<u>882</u>	<u>3,654</u>
TOTAL AID	3,525	6,109	5,262	2,604	17,500
<u>GOE</u>					
<u>Other Costs<sup>2/</sup></u>					
Personnel Services	850	850	850	850	3,400
Office Space	9	9	9	9	36
Miscellaneous	<u>52</u>	<u>52</u>	<u>52</u>	<u>52</u>	<u>208</u>
Sub-Total GOE	911	911	911	911	3,644
Inflation <sup>5/</sup>	<u>155</u>	<u>337</u>	<u>557</u>	<u>807</u>	<u>1,856</u>
Total GOE	1,066	1,248	1,468	1,718	5,500
PROJECT TOTAL	<u>4,591</u>	<u>7,357</u>	<u>6,730</u>	<u>4,322</u>	<u>23,000</u>

<sup>1/</sup>The Mission will attempt to identify participant training consistent with general project objectives that can be undertaken prior to contract start. Any pre-contract training costs will be deducted from indicated training disbursements. <sup>2/</sup> IE, Non-contract costs. <sup>3/</sup>A contingency rate of 7.5% was used. <sup>4/</sup>An inflation rate of 10% (compounded annually) was assumed. <sup>5/</sup>An inflation rate of 17% (compounded annually) was assumed.

D. Evaluation Plan

The goal of this project is to raise industrial productivity by improving the relevancy and quality of industrial skills. The economic advantages to the general public of increased productivity are well known and numerous -- e.g. lowered unit costs, higher profits and wages, greater export competitiveness, etc. However, changes in productivity attributable to a single variable, such as training, are extremely difficult to measure. Productivity is determined by the interaction of many factors -- e.g., management skills, capital investment, technology, scale of production, capacity utilization, product mix, etc. Therefore, one danger in evaluating a project intended to increase productivity will be to put too much emphasis on variables that are quantifiable and not enough emphasis on critical but difficult to measure factors.

The evaluation of the present project will need to be based on both measurable and non-measurable outcomes and will need to occur on several levels, with varying degrees of measurement difficulty. Because of the user-oriented thrust of the project, the emphasis of evaluation will be on individual establishments. Early in the project (within 60 days after the arrival of the chief of party) the contractor should complete an initial assessment of the administrative structure and programs of the PVTD. In the course of this assessment, the contractor should also obtain appropriate baseline data and develop procedures for collecting appropriate data during the project to facilitate the evaluation of progress toward purpose level achievements.

First, because of the developmental nature of the project and the objective of propagating positive regional experience as soon as possible, on-going ("formative") evaluation will be a critical component of project implementation. Formative evaluation will be the responsibility of the contractor working in collaboration with the PVTD and the AID project manager. The contractor will submit a plan for on-going monitoring and evaluation system as part of his project design. Records of training centers, industrial establishments, developmental testing of curriculum materials and the Regional Consultative Councils will provide important sources for on-going evaluation.

A second level of evaluation will consist of semi-annual progress assessments. An important source of information for this level evaluation should be interviews with industrial employees who have had (or should have had) contact with the project. The semi-annual evaluation will assess progress toward meeting project objectives and recommend any actions necessary to ensure timely progress in meeting project objectives. These evaluations should be conducted by the project staff and submitted to the Project Board of Directors and AID. If appropriate, consultant services provided under "Miscellaneous Consultant Services" may be used to assist with those internal evaluations, especially for interviewing employers.

Third, approximately 18 and 36 months after the arrival of the contractor's chief of party (i.e., project months 31 and 49), a more detailed

external evaluation will be undertaken by a team of training and other specialists (AID staff or contractors). These evaluations will cover the same objectives as the semi-annual evaluations but in more detail and with emphasis on determining design and policy changes that might be necessary to improve project performance during the remainder of the project. Both evaluations will give special attention to determining the effectiveness of the Regional Consultive Councils and making suggestions as to how their effectiveness could be improved. The project's impact on the private sector and on increasing training opportunities for women will be assessed in both the 18th and 36th month evaluations. These evaluations will also ascertain, to the extent possible, the impact of the project on productivity in individual establishments. In addition, the first (18 month) evaluation will concentrate on the entry level training aspects of the project while the second evaluation (36 month) will pay special attention to those aspects of the project concerned with direct intervention in industrial establishments (i.e., problem solving, staff upgrading and building of company training programs.)

Finally, there will be a substantive evaluation at the completion of the project to determine the success with which project objectives were achieved and to identify experiences (including AID project design appropriateness) that might be relevant to similar projects. An important consideration in this evaluation should be the extent to which project experience influenced the broader Egyptian vocational training system -- specifically the impact of the Special Consultancy component of the project described in Part 2, Section B. 10. d.

The following are illustrations of the kinds of questions to be addressed in the external and end-of-project evaluations:

- o Has overall Egyptian economic performance, and in particular, industrial sector performance, affected (or been affected by) project success?
- o How many trainees are completing training at end of project? in what sectors? and with what skills? How have these members changed with project? How have costs per trainee changed with project? How do actual training costs compare to original project estimates?
- o How many in-plant training programs have been added as a result of the project?
- o How many additional trainees are receiving training on-the-job as a result of the project?
- o How has composition of trainee classes changed? (i.e., male/female ratios, different educational backgrounds, etc.)
- o What industrial sectors are covered by training? Have new sectors been added as a result of the project? Are there needed sectors still not covered by training?

- o How appropriate is the training offered to the needs of regional industries? Are appropriate workers entering job market as result of training?
- o What has been done to upgrade trainers? How has quality of trainers changed as result of the project?
- o How well does training equipment/material meet training needs?
- o Has the flexibility, responsiveness of the PVTD training system changed as a result of project?
- o What has been the project's success in expanding skilled employment opportunities for women?
- o What is post-project status of the Regional Consultative Councils? How has Council effectiveness in regional training changed over life of project? Will the post-project training system be self-sustaining under Council supervision?
- o Is PVTD follow-up on its graduates Effective?
- o Has the project filled skills gaps identified prior to implementation? Do significant gaps remain in some skills/sectors?
- o How much of the regional industrial skills needs are being met by regional skills training centers? How much by industry-specific training centers?
- o Has the project caused any change in labor migration?

Funding for the external evaluations and the internal monitoring and evaluation systems has been provided for in the project budget.

E. Conditions Precedent to Disbursement and Covenants

1. Conditions Precedent to Initial Disbursement

Prior to any disbursement or to the issuance by AID of documentation pursuant to which disbursement will be made, the Grantee shall, except as the parties may agree otherwise in writing, furnish to AID in form and substance satisfactory to AID:

- a. A statement of the names and titles with specimen signatures of the person or persons who will act as the representatives of the Grantee.
- b. Evidence of the establishment of a board of directors chaired by the Undersecretary for Productivity and Vocational Training. The board should include representatives of public and private sector industrial firms, as well as senior officials of the PVTD

and other appropriate government agencies as determined by the PVTD.

- c. Such other documentation as AID may require.
- d. Provide adequate office and support facilities for technical advisors and their counterparts to execute their duties effectively.

Covenants

The Grantee shall:

- a. Carry out the project with due diligence and efficiency and in conformity with sound financial, administrative and other professional practices.
- b. Furnish to AID within 180 days, or such other time as AID may agree in writing, from the date of arrival of the first resident contractor representative, an implementation plan in form and substance satisfactory to AID, to include a training plan for in-country training and participant training, job descriptions for project personnel, and a description of activities to be undertaken during the first two years of the project. The plan shall be updated every six months over the life of the project.
- c. Make provision for adequate administrative arrangements and local currency from funds other than those provided by the Grant for any incentive payments to be made to personnel of the Government of Egypt engaged in project implementation, and to ensure that increased operating costs resulting from program changes brought about by the project's implementation continue to be met the project ends often.

**ANNEXES**

## Annex A

TECHNICAL ASSISTANCE

USAID will provide 504 person months (41 person years) of long term technical expertise and 116 person months of short term technical advisor services during the course of the project. Estimated U.S. Dollar cost of technical services is \$5,350,000. The staffing pattern of AID technical assistance is indicated below:

<u>LONG TERM</u>	<u>Person Months</u>
Administration Specialist (Chief of Party)	48
Vocational Administration and Management Specialist	48
Instructor Training Specialists; 2 @ 36 months each	72
Curriculum Specialists; 2 @ 36 months each	72
Audio-Visual Media Specialist	36
Instructional Materials Production Specialist; 2 @ 36 months each	72
Test and Certification Specialist	24
Industrial Training Advisors (OJT) 3 @ 36	108
Job and Task Analysis Specialist	<u>24</u>
<b>TOTAL</b>	<b>504</b>
<u>SHORT TERM</u>	
Machine Trades	6
Welding	6
Sheetmetal	6
Auto Mechanics	6
Electricity	6
Refrigeration/Air Conditioning	6
Pipe Fitting/Plumbing	6
Printing	6
Textile Production Training	12
Textile Spinning	6
Textile Weaving	6
Textile Dyeing	6
Industry Safety	8
Miscellaneous Consultant Services	<u>30</u>
<b>TOTAL</b>	<b>116</b>

Schedules of long and short-term technical assistance, a scope of contractual services, and brief statements of work for certain key contract team members are provided on the following pages.





BASIC STATEMENTS OF WORK FOR KEY TECHNICAL ASSISTANCE TEAM SPECIALISTS

1. Administration Specialist (Chief of Party)

The individual is to be a specialist in vocational technical school and/or vocational industrial training system administration, with a minimum of five years experience at this level of work. Training experience in industry would be especially helpful. Experience in a state department of Vocational Education would also be helpful. Experience in directing vocational technical projects in developing countries is desirable although not mandatory. Duties will include the following: Act as principal vocational training advisor to the PVTD; supervision and coordination of the activities of all contract specialist and consultants assigned to the project; officially represent the Contractor and exercise responsibility for the management and administration of the project under the terms of the contract; development of detailed plans for project implementation and administration, a participant training program, and commodity procurement and installation; assist USAID and the PVTD in regular project evaluation exercises; submit periodic reports as required by USAID and the PVTD.

2. Vocational Administration and Management Specialist

This person should be a specialist in vocational training system design, administration and implementation, with a minimum of five years experience in this field. Experience with vocational technical training programs in developing countries is desirable. Duties will include advising the PVTD on appropriate management structure and procedures, especially as required to support a decentralized vocational training system. He will be responsible for assisting the PVTD to plan for replication of successful regional experience, strengthening the PVTD information system, developing the PVTD staff and the introduction of new instructional methodologies both regionally and nationally.

3. Instructor Training Specialists

This person must be a professional vocational instructor trainer with a minimum of five years of proven experience. An advanced degree in vocational technical education with emphasis on teacher training is desirable. Scope of services will include: development and implementation of an in-country instructor training plan, revising or re-designing as necessary, existing programs. The specialist and his Egyptian counterparts will work closely with the curriculum development team, in developing programs to upgrade the teaching skills of PVTD instructors. He or she will also advise in training methodology, assist in developing training aids, and conduct work shops and seminars for in-service training of instructors.

#### 4. Curriculum Specialists

This specialists should have a minimum of five years of experience in the field of curriculum development. He or she should be experienced in innovative curriculum design tailored to the needs of individuals. Experience in in-plant training programs is highly desirable. Based on job and task analyses, and close coordination with Egyptian counterparts and other team specialists in the various skill areas, the curriculum designer will develop curricula, course outlines, and, to the extent possible, instructional materials, for both entry level and upgrading courses in the PVTD. Some demonstration in-plant training programs will also be designed. The curricula will be innovative and closely related to the needs of industry.

#### 5. Audio Visual Specialist

The incumbent should be experienced in all phases of audio visual production and utilization. He should have at least five years of relevant audio visual experience. An university degree in an appropriate visual communications field would be desirable, but the most important requirement is broad professional experience. The individual should have had extensive experience in the production and utilization of learning resources in training activities. He will be responsible for advising the PVTD on appropriate utilization of audio visual materials in a central instructional materials development center, regional training centers, and industrial establishments. He will be the team leader for the instructional materials production team including, in addition to himself, two instructional materials production specialists. He will be responsible for training Egyptian counterparts in instructional materials production and assisting the PVTD to establish a central instructional materials production center

#### 6. Instructional Materials Production Specialist

The incumbent should have had at least five years of practical experience in the development instructional materials. He should be familiar with the training use of materials such as simple simulation models, graphic illustrations, photographs, slides, film strips, film and television. It not expected, however that he or she be expert in all of these techniques. The contractor will be expected to select an instructional material team (the audio-visual advisor and two instructional materials production specialists) that covers all of the required areas of expertise. The incumbent will be responsible for demonstrating instructional production techniques, under the general director of the audio-visual advisor, supporting the activities of the curriculum developers, and training Egyptian counterparts.

#### 7. Test and Certification Specialist

This person must have a minimum of five years experience in the development and validation of trade tests. Although not mandatory, a

university degree in vocational training is desirable. The task of this specialist will be to advise the PVTD of appropriate procedures for determining skill standards and developing trade tests that accurately reflect the mastery of these standards. He will need to work closely with employees groups (under the sponsorship of the Regional Consultative Council) to determine standards. He will train Egyptian Counterparts in the definition of standards, the construction of trade tests, and the proper administration of such tests.

#### 8. Industrial Training Advisor

The incumbent should have at least five years of experience in in-plant industrial training. Experience working with government agencies such as National or State apprenticeship bureaus would also be helpful. The individual should be familiar with determining training requirements, establishing training plans and implementing on-the-job training programs. Incumbents in this position will be responsible for assisting the PVTD to establish an effective outreach program by contacting industrial firms in the pilot regions and explaining the programs of the PVTD and how they could assist the employer. In addition they will assist employers to assess training requirements, determine training and employment opportunities for women, plan training programs, and implement on-the-job training programs. They will train Egyptian counterparts in in-plant industrial training techniques. The advisor will need to work closely with staff of the Productivity Center and other organizations concerned with improving industrial management and efficiency.

#### 9. Job and Task Analyst

This individual must have a minimum of five years experience in the field of job and task analysis. His primary function will be to perform job and task analyses at industrial plants served, or to be served, by the training centers in the Alexandria and Delta Regions. He will coordinate closely with the curriculum design team and other contract specialists in achieving a training program fully responsive to the industrial sector. He will be responsible for training PVTD staff in the techniques of job and task analysis.

#### 10. Short-Term Advisors

The short-term trade and skill specialists will be highly experienced in their fields with a minimum of five years of experience. Their primary function will be to assess the technical skills of PVTD instructors in relation to identified needs, and provide short term skill upgrading courses. They will also work closely with and assist curriculum designers in carrying out their responsibilities; evaluating and assist in the development of instructional materials.

The Industrial Safety Specialist will conduct an in-depth survey of selected industrial sector plants and training centers, both in-plant and

regular; based on this study he will devise an appropriate safety training program. He will coordinate his activities with the curriculum design team and Instructor Training Specialists, and conduct short term workshops and seminars on safety training.

The Textile production training advisor and the specialist advisors in spinning, weaving, and dyeing will work primarily with a textile establishment to develop a center of advanced/specialized training to service the region(s) textile establishments. The technical upgrading work of the specialist advisors will be coordinated by the textile production training advisor. This team of short term advisors will work closely with the long-term advisors and their counterparts (especially the industrial training advisors, and curriculum designees) in planning and developing the regional textile advanced training center.

Miscellaneous consultant services will be provided by the contractor as required during the course of the project. Because of the developmental nature of this project, a relatively large number of months of miscellaneous consultant services have been provided to allow the project to respond to needs as they are identified.

Commodity Requirements

It is estimated that several types of commodities will be required to implement the project: Equipment to supplement existing and ordered equipment for the regional vocational training centers; expendable training materials; equipment to upgrade company training centers and programs; equipment and materials to use in OJT programs; materials to increase the amount of practical "hands-on" training; audio visual equipment vehicles; and translation services.

1. Regional Training Center Equipment: It is likely that as a result of detailed job analyses, new competencies or inadequately taught competencies will be identified that will require additional training equipment. The project should be able to purchase necessary equipment to develop industrial materials, train instructors, and validate instruction effectiveness for these new competencies. Equipment under the project will be purchased only to develop and test new competencies in the pilot regions. The PVTD will purchase necessary equipment to replicate instruction of new competencies nationally. Although the specific equipment required will not be known until actual job analyses are performed, the estimated cost of such equipment is \$325,000. (See attached illustrative list)

2. Purchase of Expendable Instructional Materials: The present quantity of expendable materials available for practical training is inadequate in the regional centers. In order to develop test, and demonstrate more practical "hands on" training techniques, the project should be able to purchase required expendable materials, such as metal, wood, and electrical wiring etc. The estimated cost is \$170,000.

3. Equipment to Upgrade Company Training Centers: Two company training centers will be equipped under the project in order to develop centers of advanced and specialized training. The actual centers to be included in the project will be selected by the contractor and the PVTD. For costing

purposes, however, it has been assumed that one center will specialize in machining and the other in textile production. Based on recent estimates proposed for shops in the GSLT Heavy Vehicle Maintenance project a combined cost of \$400,000 is projected.

4. Equipment and Instructional Materials for Company OJT Programs: In order to demonstrate the use of training equipment and materials in OJT programs, the project will provide limited resources to cooperating companies. The amount used in individual companies should not exceed \$2-3000. Total funds required are estimated t \$150,000.

5. Audio Visual Equipment: It is anticipated that the upgrading of instructional methodology will involve extensive use of audio-visual equipment the cost of both the AV delivery and production systems is estimated at \$750,000. This amount will provide for varied but limited production capability and a strong capability to modify "off-the shelf" materials.

6. Vehicles: The decentralized nature of the project will require good mobility of personnel. For example, the three industrial training advisors will spend the majority of their time visiting and working with industrial establishments. Therefore it is estimated that seven vehicles will be required at a total cost of \$65,000.

Summary of Commodity Costs:

	(\$)
Regional training center equipment	325,000
Expendable instructional materials	170,000
Company training centers	400,000
Company OJT programs	150,000
Audio-Visual equipment	750,000
Vehicles	65,000
Translation Services	<u>50,000</u>
<b>TOTAL</b>	<b>1,860,000</b>

NOTE ON  
REGIONAL CENTER EQUIPMENT

The PVTD's equipment inventory consists of older items dating back to the late 1950s and early 1960s, as well as some new equipment provided under World Bank Education Project I. Equipment to be provided under World Bank Project II is to be ordered by August, 1981 and delivery is expected by August 1982. World Bank Project II has just been approved and no plans have yet been made for equipment procurement. The PVTD does not anticipate delivery of this equipment until later 1983. All World Bank Loan equipment thus far follows

closely the same specifications of the existing older equipment. The older equipment is almost all of Russian and East German origin and of reasonably good quality. Items that are still operating are in fair condition, however, many machines are deadlined for lack of replacement parts. As it is doubtful that factory parts will be available in the foreseeable future, it must be assumed that where parts cannot be fabricated locally the machines are useless to the project and should be removed from the shops. Some could undoubtedly be cannibalized for parts. No accurate record is available from the PVTD regarding deadlined equipment and no status or maintenance reports appear to be on hand. Thus, an early objective of the contract implementation team should be a survey of all project training centers to determine status of equipment and, based on analyses of industrial jobs, what additional items must be obtained with project funds.

An analysis of inventory lists and observation of equipment at several training centers, reveals some obvious voids -- lack of certain essential items of equipment necessary to conduct effective training programs. An illustrative lists of supplementary equipment, with line item specifications and U.S. cost estimates, is given below.

ILLUSTRATIVE LIST OF EQUIPMENT  
TO BE ADDED TO TRAINING CENTERS

A. MACHINE SHOP

1. Major Items: None
2. Hand Tools:

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>UNIT COST (\$)</u>	<u>TOTAL COST(\$)</u>
4	Drill motor 3/8", with chuck key	8	320
2	Drill motor 1/2", with chuck key	100	200
2	Parallels, set BG 214820 (set of six)	60	120
2	Machine tool cart w/tools BG 459383	1,600	3,200
6	Caliper, outside BG 213637 4"	8	48
6	Caliper, outside BG 213659 8"	10	60
6	Caliper, inside, BG 213660	8	48
6	Caliper, inside, BG 213681	10	60
4	Micrometer BG 213403 0-1"	35	140
4	Micrometer BG 213414 1-2"	45	180
4	Micrometer BG 213425 2-3"	50	200
4	Micrometer BG 213436 3-4"	60	240
2	Micrometer (inside BG 160928)	80	160
2	Micrometer (depth gauge BG 213604	60	120
2	Telescope gauges (set of 3 BG 213871)	35	70
2	Telescope gauges BG 213850	15	30
2	Telescope gauges BG 213860	20	40
4	Combination square set 12" BG 214494	60	240
2	Dial caliper BG 428560	100	200
2	Universal dial test indicator BG 214629	60	120
2	Precision tool set (metric BG 197484)	1,500	3,000
2	Tool storage cabinet w/tools BG 459222-TS-23CT	6,000	12,000
2	Tool storage cabinet w/tools BG 459138-TS-22CT	3,000	6,000
4	Combination wrench set BG 483331 metric	75	300
6	Screwdriver Phillips BG 228765-4" BG 228776-6"	3	18
6	Cold chisel/punch set	25	150
10	Ball pien hammer 12 oz	12	120
6	Wing divider 8"	10	60
6	Fillet/Radius gauge	12	72
6	No. 40 screw pitch gauge	10	60
6	Tap and drill gauge	20	120
12	Center gauge	8	96
24	Steel rule 604 RE	12	288
6	Wire gauge AM. standard wire	12	72
2	Tap and die set BG 219020 (standard)	225	450
2	Tap and die set BG 219063 (metric)	75	150
4	Drill index BG 011454	150	600

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B. WELDING1. Major Items

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>UNIT COST</u> (\$)	<u>TOTAL COST</u> (\$)
1	Cutting Machine, Gas, Automatic, Profile, 2" to 30" per minute, capacity 2"	750	750
1	Tensile tester, hydraulic; 5,000-20,000 lbs., 20" max. opening, with cabinet	1,200	1,200
1	Bender, universal	700	700
1	Hack saw, power	1,000	1,000
1	Acetylene generator, carbide chunk, 100 cu.ft./hr, with relief valves and flash arrester	1,200	1,200
1	Gas welding manifold system	2,000	2,000
2	Spot welder, portable, 2.5 KVA, without timer, 3/16" capacity	300	600

2. Hand Tools

2	Storage cabinet (with tools BG 458917)	2,500	5,000
10	Tip cleaner (model C-9 standard)	5	50
2	Tip cleaner (model E-( expandable)	6	12
20	Hammer (chipping)	8	160
20	Clamp (vise grip, welding BG 203166 or No 9R)	10	200
10	Clamp ("C" BG 225036) 2 1/2"	7	70
10	Clamp ("C" BG 225069) 5"	10	100
10	Clamp ("C" BG 225080) 8"	15	150
3	Chisel set (cold) BG 225902	25	75
10	Hammer (ball pien BG 352682)	12	120
10	Helmet (welding model KP 2748 BG 262055)	15	150
24	Safety glasses BG 404399,9148	6	144
36	Gloves (welders BG 202744-565FL)	10	360
7	Cape and sleeves (welders BG 493254/SM)	30	210
10	Cape and sleeves (welders BG 493265/MED)	30	300
8	Cape and sleeves (welders BG 493276/L)	30	240
2	Cape and sleeves (welders BG 493287/XL)	30	60
20	Apron (welders BG 493305-12165)	15	300
4	Drill, electric portable, 3/8"	80	320
2	Grinder, portable	200	400
1	Set of combination wrenches BG 476355	100	100
1	Set of combination wrenches BG 483331 (metric)	100	100

C. SHEETMETAL1. Major Items

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>UNIT COST</u> (\$)	<u>TOTAL COST</u> (\$)
1	Band saw, metal cutting, 16"	900	900
1	Lathe, metal spinning, 18" swing, with standard tools and accessories	1,800	1,800
1	Flexible shaft grinder	300	300
1	Compressor, air, single stage, 1 HP	850	850
1	Rotary machine, deep throat, with accessories	600	600
1	Rotary machine, throatless	500	500
1	Box and pan brake, 36"	1,400	1,400
1	Stake plate with stand and following stakes: hollow mandrel, beak horn, double seaming-29", double seaming with 4 heads 30 1/2", common blow horn, creasing, bevel edge square - 2 1/2" x 4 1/2", coppersmith's square, hatchet, bottom, candle mould, grooving	2,000	2,000

2. Hand Tools

1	Storage cabinet with sheetmetal tools, Brodhead Garret #TS-11	3,500.00	3,500.00
6	Tin snips 8" BG 18119	6.00	36.00
6	Tin snips 11" BG 181130	8.00	48.00
6	Tin snips 13-1/2" BG 200180	11.00	66.00
6	Tin snips 10" duckbill BG 200220	6.00	36.00
4	Seamer (handy BG 199710)	15.00	60.00
2	Rivet set 00, 1, 2, 3, 4, 5, 6, 7, 8,	40.00	80.00
10	Wing dividers 8" BG 199563	10.00	100.00
10	Combination pliers 8" BG 227287	4.00	40.00
4	Adjustable wrench 8" BG 194698	6.00	24.00
8	Hacksaw adjustable BG 235150	10.00	80.00
10	Screwdriver 6"	3.00	30.00
10	Tinners riveting hammer	10.00	100.00
10	Tinners setting hammer	10.00	10.00
10	Ballpeen hammer 12 oz	8.00	80.00
6	Nippers, end cutting 8"	10.00	60.00

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<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>UNIT COST</u> (\$)	<u>TOTAL COST</u> (\$)
4	Punch/chisel set 12 pcs.	10.00	40.00
10	Tinners mallets 3 x 5	6.00	60.00
10	Blind riveter kit w/accessories	50.00	500.00
10	Sheetmetal grip tool	8.00	80.00
10	Metal punch set w/bench mount	40.00	400.00
10	Tinners rule 3'	25.00	250.00
10	Aviation snips R.H.	10.00	100.00
10	Aviation snips L.H.	10.00	100.00
D.	<u>AUTO MECHANICS</u>		
	1. <u>Major Items</u>		
1	Wheel balancer set, with spinner and wheel weight plier with all adapters and standard equipment, and 50 ea of standard weights from 1/4 oz. to 6 oz.	2,500.00	2,500.00
1	Wheel alignment equipment, portable, mechanical type. Capable of checking caster, camber, toe, centerline steering, king pin, inclination, turning angle, rear wheel strack. Complete	2,300.00	2,300.00
1	Wheel bearing packer	90.00	90.00
1	Portable hydraulic crane, 1 ton	900.00	900.00
1	Washer, brake assembly	185.00	185.00
3	Micrometer, brake drum	110.00	330.00
2	Bleeder, brake with adapters	250.00	500.00
4	Brake hone-disc, with spare stones	40.00	160.00
2	Disc rotor indicator	30.00	60.00
1	Brake drum riveter set	250.00	250.00
1	Brake shoe deliner riveter	600.00	600.00
1	Brake shoe arcing machine	700.00	700.00
1	Dolly, dual wheel	500.00	500.00
1	Hydraulic automotive body and frame repair outfit, complete with 10-ton hydraulic unit	1,500.00	1,500.00
1	Headlight testing and adjusting unit	900.00	900.00
1	Master engine analyzer. Test the following: secondary resistance, secondary insulation, ignition condensers, manifold, vacuum, fuel pump, RPM, distributor, combustion, cylinder balance, wiring insulation	3,000.00	3,000.00
2	Spark plus cleaner and tester	150.00	250.00
2	Generator regulator tester	250.00	500.00
2	Distributor tester	100.00	200.00
2	Starter tester	90.00	180.00
1	Air compressor, single stage, 1 1/2 HP	900.00	900.00

2. Hand Tools

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>UNIT COST</u> (\$)	<u>TOTAL COST</u> (\$)
5	Torque wrench 3/8" dr. (10-200 in. lbs.)	62.00	310.00
5	Torque wrench 1/2" dr. (10-250 ft.lbs.)	71.00	355.00
2	Bushing driver set	32.00	64.00
5	General mechanics tool set	1,000.00	5,000.00
5	Impact wrench 1/2" dr.	60.00	300.00
5	Impact accessories	26.00	130.00
2	Drill index	140.00	280.00
1	Drill motor 3/8" w/chuck key	75.00	75.00
1	Drill motor 1/2" w/chuck key	90.00	90.00
1	Gear puller set	305.00	305.00
5	Internal snap ring pliers	8.00	40.00
5	External snap ring pliers	8.00	40.00
2	Dial indicator set	50.00	100.00
2	Micrometer set 0-1", 1-2", 2-3", 3-4"	120.00	240.00
2	Inside/outside calipers	7.00	28.00
2	Alignment tool set	250.00	500.00
6	Tubing tool kit BG 184384	33.00	198.00
2	Double flaring tool kit BG 295706	19.00	38.00
3	Disc brake service kit BG 192202	245.00	735.00
10	Brake hand tool set BG 157909	87.00	870.00
3	Replacement stones BG 157953	10.00	30.00
3	Brake shoe setting gauge BG 389709	13.00	39.00
2	Brake drum wear gauge BG 416982	17.00	34.00
2	Brake drum wear gauge BG 389742	21.00	42.00
10	Brake adjusting tool BG 295622	4.00	40.00
2	Tap and die set BG 219020	208.00	416.00
2	Tap and die set metric BG 219063	54.00	108.00
2	Camshaft service set BG 497317	160.00	320.00
2	Sleeve puller set BG 497299	140.00	280.00
5	Socket set board Snap-On VEV-1005A-K	450.00	2,500.00
5	Valve cleaning set Snap-On VEV-10267-K	100.00	500.00
5	Cylinder service set Snap-On VEV-1033A-K	250.00	1,250.00
5	Punch/chisel set Snap-On VEV-1008-K	150.00	750.00
5	Screwdriver set Snap-On VEV-1009A-K	120.00	600.00
5	Pliers set Snap-On VEV-1007-K	160.00	800.00
5	Hammer set Snap-On VEV-1023A-K	115.00	575.00
5	Wrench set combo Snap-On VEV-1003A-K	250.00	1,250.00
5	Boxsockets set Snap-On VEV-1006-K	275.00	1,375.00
5	Metric wrench set Snap-On VEV-1020A-K	325.00	1,625.00
5	Metric socket set Snap-On VEV-1021A-K	400.00	2,000.00
5	1/2" dr. ratchet/handle set Snap-On VEV-1001-K	600.00	3,000.00
5	1/2" dr. socket set Snap-On VEV-1000-K	500.00	2,500.00
5	3/8" dr. tool set Snap-On VEV-1031A-K	475.00	2,375.00

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>UNIT COST</u> ( <u>\$</u> )	<u>TOTAL COST</u> ( <u>\$</u> )
4	Drill motor 3/8" with chuck key	75.00	300.00
4	Drill motor 1/2" with chuck key	90.00	360.00
2	Pressure tester BG 186302	320.00	640.00
2	Compression tester BG 186335 (case)	23.00	46.00
2	Compression tester BG 186324	60.00	120.00
2	Adapters BG 186368 Detroit diesel	44.00	88.00
2	Adapters BG 190273 Cat.	46.00	92.00
10	Feeler gauge BG 401273	5.00	50.00
10	Adjustable wrench 10"	12.00	120.00
2	3/4" dr. socket set BG 394292	183.00	366.00
2	Screw extractor set BG 218663	6.00	12.00
20	Safety glasses	4.00	80.00
E.	<u>ELECTRICITY</u>		
	<u>1. Major Items</u>		
2	Wiring trainer BG 479934	1,160.00	2,320.00
2	Service entrance & power distribution panel	1,300.00	2,600.00
2	Motor control wiring unit BG 015555	1,050.00	2,100.00
	<u>2. Hand Tools</u>		
20	Wire skinners BG 172400	5.00	100.00
20	Crimper cutter BG 172707	10.00	200.00
20	Continuity testers BG 171686	6.00	120.00
20	AC DC live voltage tester BG 401072	8.00	160.00
20	Electric soldering sets BG 177364	40.00	800.00
10	Electric drills 1/4 hspr HD	75.00	750.00
20	Screw driver sets BG 429212	7.00	140.00
20	Screw driver sets 230993	6.00	120.00
20	Vise grip pliers BG 186876	5.00	100.00
20	Side cutting pliers BG 227210	10.00	200.00
20	Electrician's pliers BG 358009	7.00	140.00
20	Needle nose pliers BG 357993	6.00	120.00
20	Needle nose pliers BG 227086	6.00	120.00
20	Insulated screw driver BG 353780	4.00	80.00
20	Amperage tester BG 168243	29.00	580.00
20	Conduit benders BG 173732 1/2"	9.00	180.00
20	Conduit benders BG 173765	18.00	360.00
20	Safety glasses	4.00	80.00
2	Torque wrench 3/8" dr. 10-200 in. lbs.	62.00	124.00
1	Puller set	305.00	305.00

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>UNIT COST</u>	<u>TOTAL COST</u>
		(\$)	(\$)
2	Bushing driver set	32.00	64.00
5	Metric wrench set Snap-On VEV-1020A-K	325.00	1,625.00
5	Metric socket set Snap-On VEV-1021A-K	400.00	2,000.00
5	Electric shop tool kit Snap-On VEV-1019B-K	300.00	1,500.00
5	Power technicians set Snap-On VEV-1017B-K	350.00	1,750.00
5	A frame for tool boards Snap-On KRA-213A	80.00	400.00
5	Impact wrench 1/2"dr.	60.00	300.00
5	Impact accessories	26.00	130.00
1	Tap and die set BG 219020	208.00	208.00
1	Tap and die set metric BG 219063	54.00	54.00
1	Drill index BG 011454	140.00	140.00
1	Drill motor 3/8" with chuck key	75.00	75.00
1	Drill motor 1/2" with chuck key	90.00	90.00
5	Feeler gauge BG 401273	5.00	25.00
5	Adjustable wrench 10"	12.00	60.00
2	Screw extractor set BG 218663	6.00	12.00
5	Hacksaw with blades	9.00	45.00
<b>F. <u>AIR CONDITIONING AND REFRIGERATION</u></b>			
<b>1. <u>Major Items</u></b>			
1	Commercial refrigeration and air conditioning training unit, with manuals and test equipment package, BG 181711, model 9502	5,500.00	5,500.00
1	Portable charging station, BG 183360	650.00	650.00
1	Electronic leak detector, BG 392995	175.00	175.00
2	Refrigeration and air conditioning tool cabinets, complete with tools and testing equipment BG 459098 Model TS21T	3,300.00	6,600.00
<b>G. <u>PIPE FITTING AND PLUMBING</u></b>			
<b>1. <u>Major Items</u></b>			
1	Pipe and bolt threading machine BG 222429	1,800.00	1,800.00
1	Stand for above	80.00	80.00
1	Adjustable pipe support	80.00	80.00
2	Exposed ratchet drop head pipe threader 1/8"-1-1/4"	200.00	400.00
2	Heavy duty pipe cutter, 1/8"-2"	50.00	100.00
2	Pipe vise, 1/8"-2 1/2"	50.00	100.00
1	Portable trisland vise, 1/8"-2-1/2"	150.00	150.00

2. Hand Tools

<u>QUANTITY</u>	<u>DESCRIPTION</u>	<u>UNIT COST</u> (\$)	<u>TOTAL COST</u> (\$)
10	Plumbing tool kit, BG 406021	175.00	1,750.00
4	Heavy duty chain wrench, 5" capacity	20.00	80.00
4	Vise grip chain wrench	15.00	60.00
4	Plastic tubing cutter, 1/4"-2-5/8"	30.00	120.00
2	Ratchet pipe reamer	70.00	140.00
1	Pipe/conduit mechanical bender, 1/2", 3/4" and 1", with stand	275.00	275.00

H. PRINTING (To be determined by contract team.) estimate: \$80,000

I. TEXTILE PRODUCTION (To be determined by contract team.) estimate:  
\$90,000

J. AUDIO VISUAL EQUIPMENT

25	Opaque project, 600 watt, BG 336011	375.00	9,375.00
25	Overhead projector, 600 watt, with 2-way writing roll attachment, 6 ea 50 ft. reusable acetate rolls,	300.00	7,500.00
25	Super 8mm film loop projector, with stop frame, remote control, 150 watt, BG 322237	220.00	5,500.00
25	8 mm film project, with sound, BG 364970	720.00	18,000.00
25	16 mm film projector, with sound	1,050.00	26,250.00
25	Film strip and slide projector	25.00	3,125.00
25	Projection screen, 60" x 60", tripod, portable, silver lenticular	120.00	3,000.00
50	Projection screen, 60" x 60" wall mount	80.00	4,000.00
50	Mobile audio-visual equipment table, 34" high, 18" x 24" table	100.00	5,000.00
50	AV storage cabinet	150.00	7,500.00
25	Tape cassette recorder and player	300.00	7,500.00
25	Video recorder, Betamax type, with all accessories	1,000.00	25,000.00
25	Television sets, 19"	600.00	15,000.00

NOTE: In some items above the designation BG (for Brodhead Garrett Co.) and various manufacturers' model numbers are used where clarification is necessary.

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AIDAC: PLEASE PASS TO ALLAN SALT

E.O. 12065: N/A

TAGS: ELAB

SUBJECT: COMMENTS FOR PREPARATION OF MINISTRY OF INDUSTRY TRAINING PAPER

REFERENCE: ALLAN SALT/WILLIAM KELLEY TELECOMMUNICATION

1. THIS CABLE REFLECTS THE REACTIONS OF JAMES KLEIST, DOL ADVISOR ON MEDIA SUPPORT FOR SKILL TRAINING SYSTEMS, TO QUESTIONS RAISED BY ALLAN SALT (REFTELCON) REGARDING AN EGYPTIAN PRODUCTION CAPABILITY FOR NON-PRINT MEDIA.

2. A "LIMITED" MEDIA PRODUCTION CAPABILITY TO SUPPORT THE TEN IDENTIFIED KINDS OF MEDIA DISPLAY EQUIPMENT WILL COST APPROXIMATELY \$500,000 TO \$850,000. IT IS MY UNDERSTANDING THAT THIS AMOUNT WOULD BE EXCESSIVE. THE PRODUCTION CAPABILITY REPRESENTED HERE, IT SHOULD BE ADDED WOULD PRIMARILY BE USED TO ORIGINATE "NEW" INSTRUCTIONAL MEDIA PRODUCTS.

3. IN PLACE OF THE AFOREMENTIONED SYSTEM AND TO ACCOMMODATE THE LIMITED AMOUNT OF FUNDS AVAILABLE, A SIMPLIFIED APPROACH WHICH TAKES ADVANTAGE OF EXISTING INSTRUCTIONAL MATERIALS AND PROVIDES FOR THEIR MODIFICATION IS RECOMMENDED. THIS CAPABILITY WOULD REQUIRE ABOUT 70% OF THE FUNDS AVAILABLE FOR THIS SEGMENT OF THE OVERALL PROJECT. A PRODUCTION CAPABILITY WHICH PROVIDES FOR THE DEVELOPMENT OF SIMPLIFIED FORMS OF INSTRUCTIONAL MEDIA (OVERHEAD TRANSPARENCIES, AUDIO TAPE CASSETTE RECORDINGS, 35MM COLOR SLIDES, ETC.) WOULD COMPOSE THE ADDITIONAL 30% OF THE TOTAL COST. IT MUST BE CLEARLY UNDERSTOOD THAT THIS MODEST PRODUCTION CAPABILITY WOULD REQUIRE EXPANSION TO DEVELOP ORIGINAL TELEVISED INSTRUCTIONAL MATERIALS AND PROVIDE FOR THEIR DUPLICATION ON VIDEO-TAPE. THE CAPABILITY TO MODIFY COMMERCIALY AVAILABLE "OFF THE SHELF" NON-PRINT INSTRUCTIONAL MATERIALS IS EMPHASIZED.

4. IN SHORT, THE MEDIA PRODUCTION FACILITY WOULD TAKE ACCEPTABLE OFF THE SHELF MATERIALS WHICH MEET THE OBJECTIVES OF THE CURRICULA AND MODIFY THEM FOR USE ON THE SOON TO BE ACCQUIRED BETAMAX TELEVISION PLAYERS AND MONITORS IN THE VARIOUS CENTERS. FIRST PRIORITY WOULD

11/DDB

BE GIVEN TO THE ADAPTION OF THOSE MATERIALS IN THE SLIDE-TAPE OR SOUND FILMSTRIP FORMAT. FOR VOCATIONAL TRAINING PURPOSES THESE MATERIALS ARE AVAILABLE IN ABUNDANCE AND ARE MOST EASILY ADAPTED FOR TRANSFER ONTO VIDEOTAPE. TRANSFER OF THE VARIOUS MEDIA TO VIDEOTAPE WOULD BE ACHIEVED BY A SIMPLE DIRECT RECORDING TECHNIQUE WHICH RESULTS IN AN ACCEPTABLE PRODUCT WITHOUT THE COST OF A FILM CHAIN. LAST PRIORITY WOULD BE GIVEN TO THE MODIFICATION OF COMMERCIAL AND INDUSTRIALLY AVAILABLE MOTION MEDIA PRODUCTS (FILM) WHICH REQUIRE COMPLEX SYNCHRONIZATION BETWEEN SPECIFIC SCENES AND THE ARABIC TRANSLATION OF THE TEXT WHICH ACCOMPANIES THOSE SCENES (THE DIFFICULTY BEING THE FACT THAT THE NARRATION TRANSLATED FROM ENGLISH TO ARABIC IS ALMOST ALWAYS LONGER OR SHORTER THAN THAT SPACE/TIME OCCUPIED BY THE ORIGINAL NARRATION).

5. THUS, THE PRINCIPLE FUNCTION OF THE FACILITY WOULD BE TO REPACKAGE STILL SEQUENCE MEDIA (SOUND FILMSTRIPS) OBTAINED FROM COMMERCIAL SUPPLIERS AND GOVERNMENT SOURCES INTO THE BETAMAX VIDEOCASSETTE FORMAT FOR DISPLAY ON TELEVISION PLAYBACK EQUIPMENT. PROVISION WOULD ALSO EXIST FOR ORIGINAL PRODUCTION OF SIMPLE MEDIA SUCH AS CHARTS, OVERHEAD TRANSPARENCIES, 35MM COLOR SLIDES, AUDIO CASSETTE RECORDINGS, AND SLIDE-TAPE PRESENTATIONS BY MEDIA PERSONNEL AND KNOWLEDGABLE CLASSROOM INSTRUCTORS.

6. A MAJOR ASSUMPTION IS THAT THE TEN TYPES OF MEDIA DISPLAY EQUIPMENT IDENTIFIED FOR PURCHASE WOULD FUNCTION PRIMARILY TO DISPLAY AUDIOVISUAL MATERIALS AVAILABLE FROM COMMERCIAL SOURCES AND PRODUCED FOR AN ARABIC SPEAKING AUDIENCE. THE MEDIA PRODUCTION FACILITY UNDER DISCUSSION WOULD SERVE TO SUPPLEMENT AVAILABLE MEDIA AND MEET SIMPLE MEDIA PRODUCTION RECIUREMENTS.

7. THE GENERAL EQUIPMENT REQUIRED TO SUPPORT THE PROPOSED PRODUCTION FACILITY WOULD INCLUDE BUT NOT BE LIMITED TO:

- ..INDUSTRIAL MODEL U-MATIC VIDEOTAPE RECORDER - 3 EA.
- ..INDUSTRIAL MODEL BETAMAX VIDEOTAPE RECORDER - 2 EA.
- ..SWITCHER, SPECIAL EFFECTS GENERATOR, WITH SYNC COMPONENT
- ..EDITOR CONSOLE
- ..TIME-BASE GENERATOR
- ..19" COLOR TV MONITORS - 2 EA.
- ..9" BLACK AND WHITE MONITORS - 6 EA.
- ..12" COLOR TV MONITOR - 1 EA.
- ..FOUR CHANNEL AUDIO MIXER
- ..TWO/FOUR TRACK REEL TO REEL RECORDER - 2 EA.

- ..TWO TRACK MASTER CASSETTE RECORDER
- ..AUDIO CASSETTE DUPLICATOR - TELEX TYPE - MASTER W/TWO SLAVES
- ..33 1/3 RPM TURNTABLE W/ARM & CARTRIDGE
- ..MICROPHONE PACKAGE (TO INCLUDE FOUR MICROPHONES - EACH ONE FOR DIFFERENT SPECIFIC REQUIREMENTS)
- ..TELEVISION CAMERA W/ONE INCH TUBE, ELECTRONIC VIEWFINDER, 6:1 ZOOM LENS, AND TRIPOD WITH PAN HEAD - 2 EA.
- ..PRISM/MIRROR WITH REAR VIEW PROJECTION SCREEN TO MAKE FILM TO TAPE TRANSFER
- ..16MM SOUND MOTION PICTURE PROJECTOR AND STAND
- ..SUPER 8MM SOUND MOTION PICTURE PROJECTOR AND STAND - 5PPER 8MM
- ..SUPER 8MM SOUND FILM LOOP PROJECTOR
- ..35MM SOUND SLIDE-TAPE PROJECTOR
- ..35MM SOUND FILMSTRIP PROJECTOR
- ..70"X70" WALL MOUNTED PROJECTION SCREEN
- ..35MM EKTAGRAPHIC SLIDE FILM PROJECTORS - 2 EA.
- ..DISSOLVE UNIT TO ACCOMMODATE EKTAGRAPHIC SLIDE PROJECTORS

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- ..WOLLENSAK TYPE CASSETTE RECORDER AND SYNC (1000 HZ) RECORDING UNIT
- ..35MM CAMERA WITH COMPLEMENT OF LENSES AND ACCESSORIES (2 EA.)
- ..SEAL COMMERCIAL MODEL DRY MOUNT PRESS
- ..3M SECRETARY II TYPE THERMOFAX COPY MACHINE TRANSPARENCY MAKER (2 EA.)
- ..POWENS ILLUMATRAN SLIDE COPYING UNIT
- ..HEADLINER MACHINE FOR PRODUCING TITLES - 3-M TYPE OR EQUAL
- ..MECHANICAL DRAWING TABLE, CHAIR, DRAWING MACHINE, TABORET, TOOLS, ETC.
- ..FLOOR MODEL EASEL
- ..VARIETY OF PATCH CORDS, EXTENSION CORDS, ETC. ONE LOT
- ..THREE UNIT PORTABLE LIGHTING KIT
- ..SPARE LAMPS, BELTS, PULLEYS, ETC. FOR ABOVE MENTIONED EQUIPMENT
- ..LUCYGRAPH IMAGE TRANSFER UNIT
- ..PHOTO-MECHANICAL-TRANSFER UNIT WITH PROCESSOR (IF REQUIRED)
- ..OPTIONAL - BASIC BLACK AND WHITE DARKROOM PACKAGE EXPANDABLE TO INCLUDE COLOR PRINTS. PROCESSING OF 35MM EKTACHROME FILM AND MOUNTING TO BE INCLUDED.

8. IT IS ANTICIPATED THAT THE ABOVE PACKAGE COULD BE ASSEMBLED AT A COST OF BETWEEN \$175,000 AND \$225,000. A BASIC "BARE BONES" CAPABILITY COULD BE PACKAGED FOR SOMEWHAT LESS. ACCOMMODATION SHOULD BE MADE FOR THE REPAIR, ADJUSTMENT, AND MAINTENANCE OF THE TELEVISION PRODUCTION EQUIPMENT. STOESSEL

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PARTICIPANT TRAINING

Participant training, all of which will be short-term (not exceeding one year), will be conducted at U.S. vocational technical schools, universities known for their excellence in vocational and industrial education, State Vocational Training Departments and industrial plants. A total of 403 person months will be provided at an estimated cost of \$1,695,700. An illustrative participant training plan is provided on the following pages; however, the Contractor will have final responsibilities for designing the participant training program, the selection of participants, scheduling, monitoring, and all logistical and financial arrangements. It is anticipated that actual training will begin in approximately the 6th project month, then continue until the first quarter of the fourth project year.

The training of participants is scheduled, insofar as possible, about mid-point in the tour of their contract team counterparts. It is planned that they have the opportunity to work with their counterparts both before and after their period of training in the U.S. However, for some specialists, such as administrators, it is planned to obtain their training as early as possible so as to maximize their capacity to work with technical advisors later in the project to ensure continuity and replicability.

A survey of PVTD records for key officials likely to be directly related to this project reveals that the only officials who have received training in the United States are those sent by USAID for six weeks in 1978. They visited industrial training facilities and vocational education institutions for four weeks in the U.S., and the SENA and SENAI national systems of vocational training in Columbia and Brazil for one week each. Their names and titles are : Mr. Mohamed Hamza Hassanin Hamza, Director General of Productivity and Vocational Training; Engr. Talat Refat Ibrahim, Director of the Productivity Branch; Engr. Michael Ahtala Michael, Controller of the Technical Office; Engr. Mohamed El Tayeb, Director of the Syllabus and Program Section; and Mr. Ramadan Mohamed Ramadan, Director of Registration and Apprenticeship Affairs Section.

The following table shows the projected numbers of participant trainees, their areas of specialization and length of training programs.

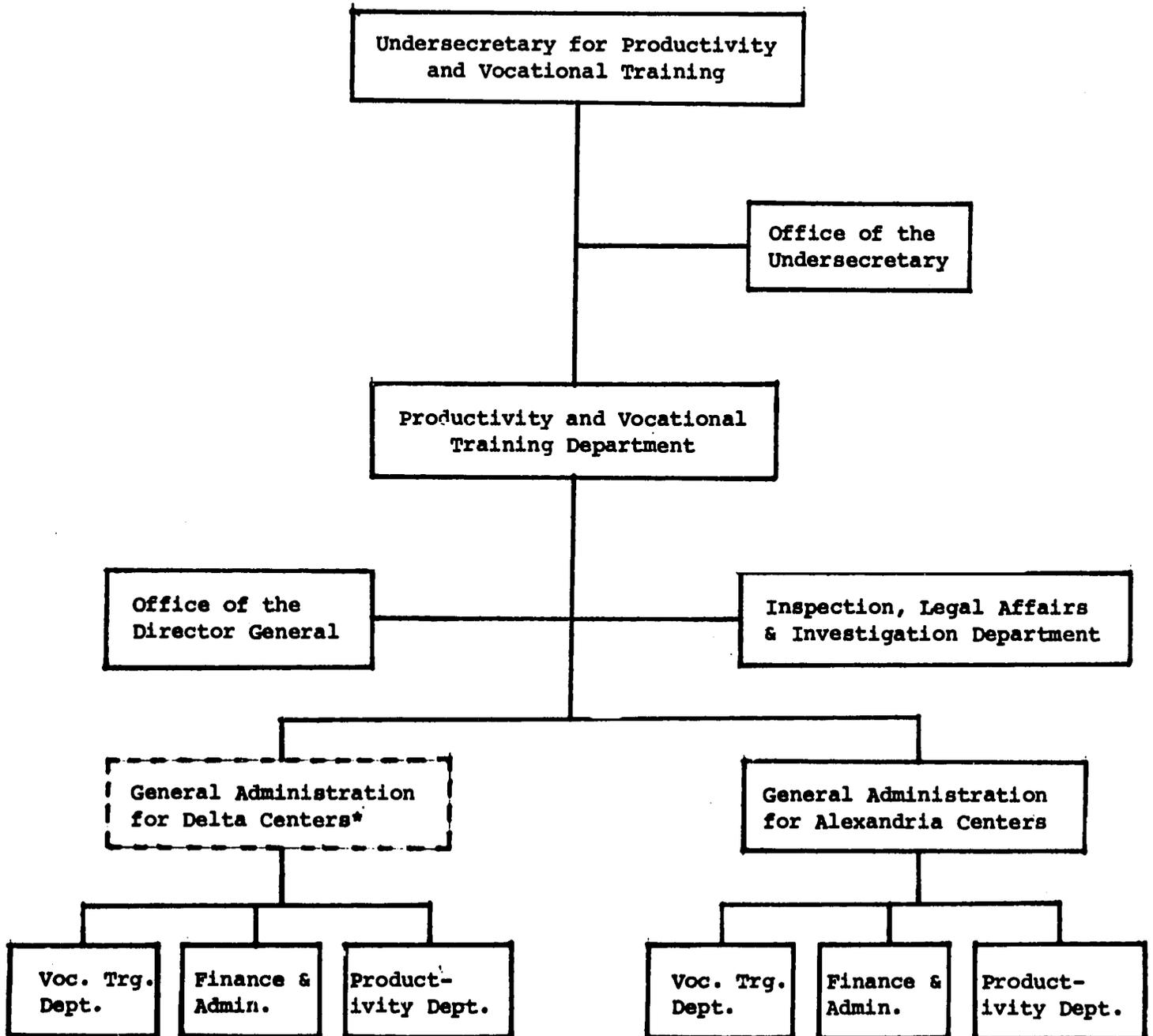
PARTICIPANTS TO BE TRAINED IN THE U.S.

<u>Position/Specialty</u>	<u>Number</u>	<u>Length of Training (mos.)</u>	<u>Person Months</u>
Instructor Trainers	4	6	24
Curriculum Designers	2	10	20
Technical Information & Documentation	2	6	12
Audio Visual Application	2	10	20
Instructional Materials Development	2	10	20
Job Analysis, Testing and Classification	2	10	20
On-The-Job-Training	4	10	40
Industrial Safety	2	6	12
Company Training Officials	50	2	100
Training Administration	8	3	24
Training Administration	2	12	24
Apptitude Testing and Guidance	2	6	12
Miscellaneous	25	3	75
<b>TOTAL</b>	<b>107</b>		<b>403</b>

The company officials would include key individuals (Chairman, Administrator, Training Director, etc.) from industrial firms in the Alexandria and middle Delta regions. They would visit industrial plants in the U.S. known for excellence in modern, innovative training programs, also vocational technical training institutions, and organizations specializing in organization and management training.



ORGANIZATIONAL CHART FOR PVTD  
CAIRO CENTRAL OFFICE, ALEXANDRIA  
AND DELTA REGIONS



\* Proposed

PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Annex E

Project Title & Number: Vocational Training for Productivity 263-0062

Date of Project: \_\_\_\_\_  
 From FY 1982 \_\_\_\_\_ to FY 1987 \_\_\_\_\_  
 Total U.S. Funding \$15,333,000  
 Date Prepared: July 1981 (revised)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p><b>Increased productivity and employment resulting from increased industrial productivity and expansion of the industrial sector.</b></p>	<p>Measures of Goal Achievement:</p> <p><b>Overall economic and sectoral performance, productivity measures, growth, competitiveness (with foreign products in Egypt and/or abroad)</b></p>	<p>Sector data from GOE agencies</p> <ul style="list-style-type: none"> <li>- Existing relevant sector and/or sub-sector analysis (e.g. by UNDP, AID, JBRD, or other foreign assistance agencies, or by university groups).</li> <li>- Special surveys of the industrial sector.</li> </ul>	<p>Assumptions for achieving goal target:</p> <ul style="list-style-type: none"> <li>- Economic liberalization "open door policy" policy continuing.</li> <li>- This project and others in the AID/C portfolio are coordinated and complementary.</li> <li>- GOE policies encourage/allow factor prices to reflect relevant scarcity and give them meaningful role in public sector investment decisions.</li> </ul>
<p>Project Purpose:</p> <ul style="list-style-type: none"> <li>- Develop a user-oriented PYTD vocational training system using appropriate curricula, instructional materials, and instructional methodology, in two geographical regions.</li> <li>- Strengthen industrial companies ability to design and implement company based training programs.</li> <li>- To develop and test a variety of training techniques &amp; procedures prior to National (use).</li> </ul>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ul style="list-style-type: none"> <li>- Establishment of regional vocational training systems meeting employers skill needs through use of relevant curriculum and training materials, well trained instructors, appropriate instructional technology.</li> <li>- Approximately 200 industrial firms assisted to design implant training programs and solve specific industrial training problems.</li> <li>- PYTD plan and capability to propagate regional experience throughout Egypt</li> </ul> <p>Magnitude of Outputs: (See attached sheets)</p>	<ul style="list-style-type: none"> <li>- Organization records.</li> <li>- Semi-annual interviews with officials and foreman of industrial firms.</li> <li>- Trade tests applied to training graduates</li> </ul>	<p>Assumptions for achieving purpose:</p> <ul style="list-style-type: none"> <li>- Public and private sector company cooperation.</li> <li>- GOE willingness to allow equal emphasis on public and private sectors.</li> </ul>
<ul style="list-style-type: none"> <li>- Regional training centers in pilot regions have relevant user oriented systems.</li> <li>- Experience from regional programs that will allow national replication.</li> <li>- PYTD has management and technical skills to implement replication.</li> <li>- System of trade tests established in pilot regions.</li> <li>- Company level training programs established.</li> </ul>	<p>Implementation Target (Type and quantity)</p> <ul style="list-style-type: none"> <li>- 504 months of long-term assistance and 116 months of short-term assistance in curriculum development, instructional materials development, industrial training (OJT), management, and trade specific technical skills.</li> <li>- 403 person months of training in above areas for staff of public and private firms and the PYTD. Emphasis will be on in-plant training.</li> <li>- \$1,860,000 for supplemental training equipment, audio-visual equipment, vehicles and expendable training materials.</li> <li>- \$9.3 million</li> </ul>	<ul style="list-style-type: none"> <li>- Regional Consultative Council Records.</li> <li>- Semi-annual company interviews.</li> <li>- Industrial Production and employment data.</li> <li>- Project records and requests, responses, assessment by productivity centers.</li> <li>- Contractor reports; MOIR reports.</li> <li>- 18th month, 36th month, and end of project evaluations.</li> <li>- Review of curricula and materials generated by project.</li> </ul>	<p>Assumptions for achieving outputs:</p> <ul style="list-style-type: none"> <li>- Training problems are referred to PYTD by other industry projects.</li> <li>- Industrial organizations are willing to collaborate and develop their training programs.</li> <li>- PYTD assigns key officials as counterparts.</li> <li>- Egyptian and U.S. project staff are relatively stable.</li> <li>- Regional Consultative Council members are available for productivity.</li> </ul>
<p>Inputs:</p> <ul style="list-style-type: none"> <li>- Technical Assistance</li> <li>- Participant Training</li> <li>- Commodities.</li> <li>- Salaries, incentives, office space, and operating expenses.</li> </ul>	<p>AID records and semi-annual and annual reports</p> <ul style="list-style-type: none"> <li>- Contractor records.</li> <li>- MOIR/PYTD records.</li> </ul>	<p>Qualified contractor available.</p> <ul style="list-style-type: none"> <li>- U.S. training techniques and expertise can be used effectively in Egypt</li> <li>- Qualified PYTD and company participant trainees can be released for training in U.S.</li> <li>- Appropriate commodities can be obtained in a timely manner.</li> </ul>	<p>Qualified contractor available.</p> <ul style="list-style-type: none"> <li>- U.S. training techniques and expertise can be used effectively in Egypt</li> <li>- Qualified PYTD and company participant trainees can be released for training in U.S.</li> <li>- Appropriate commodities can be obtained in a timely manner.</li> </ul>

## Annex E

Specific project outputs include the following:

- o Updated curricula and instructional materials for approximately 20 courses.
- o Approximately 250 instructors upgraded in pilot regions.
- o 18 regional training center programs analyzed and strengthened to meet local needs.
- o Standards and skill tests prepared for approximately 20 trades.
- o At least two company training centers developed to provide specialized and advanced training in pilot regions.
- o Approximately 100 public and private sector industrial establishments assisted in establishing company training programs.
- o Approximately 100 public and private sector industrial establishments helped to solve specific production related training problems.
- o Productivity center program developed for training industrial supervisors (and training directors) in industrial training programs for productivity.
- o Revised instructor training curricula and materials reflecting regional experience.
- o Development of central instructional materials production center in ITI.
- o Mechanisms established for linking PVTD with industry's skill needs, including:
  - Regional Consultive Councils
  - Outreach program
  - Follow up surveys
- o Management Information System for PVTD in place
- o Approximately 40 PVTD staff (excluding instructors) trained in the U.S. and 50 in Egypt
- o 50 industry staff trained in the U.S. and approximately 200 in Egypt
- o Increased training and employment of women in the skilled trades.
- o Private sector training capability improved, both in plant and through improved access to PVTD programs.
- o Plan for propagation of Regional experience to Cairo and rest of Egypt.

- o Regional Consultive Councils in the pilot regions capable of determining employers needs and linking these needs with development of appropriate programs and policies by the PVTD.

LINKAGE MECHANISMS FOR RELATED  
PRODUCTIVITY PROJECTS

Most of the projects related to increased productivity have now been designed in a way to complement one another and to have a synergistic outcome. Though each project has a special focus, it recognizes that a specific project can access services from other projects to respond to problems beyond its capabilities. One concern has been the need for various formal and/or informal linkage mechanisms. This paper briefly describes possible linkages and also summarizes the characteristics of each project.

POSSIBLE LINKAGE MECHANISMS

1. AID Project Managers: It may be beneficial for the Mission to consolidate these projects by establishing a matrix organization composed of project director and four project managers. Though the personnel would formally work out of their existing offices, the project director would be able to cross existing organizational boundaries to coordinate these projects and influence the contractors implementing the projects.
2. Contractors: Each contractor team for each project should be briefed by AID as to Mission strategy, the overall objectives of the projects, and how the projects are intended to complement one another. The Mission will also consider having joint meetings with the contractor team.
3. Constituency Group: Each of the projects shares more or less the same constituency group (potentially at least) and AID should consider taking the lead to advertise its program on a coordinated basis to the group. Though each project (except IPP) has been designed so it must generate demand for its specific service, it may be advantageous to market a "package" of services to firms. Several networks exist, or will exist, that will allow access to the constituency group in a more coordinated and effective manner than is now the case.
4. Sectoral Focus. Although narrow subsectoral focus has been avoided, it seems advisable to have the projects at least ensure a capacity to work in the same sector at the same time so similar or problems with multiple causes can be worked on as identified. Again AID in cooperation with MOIMR could influence this approach but need not necessarily control it. Communication/coordination among contractors and implementing agencies becomes vital.
5. Geographic Proximity. Since all the projects will be implemented at least in the Cairo, Alexandria, and mid-Delta areas the planning process should use this as a way of focusing the projects to achieve a greater impact.
6. Diagnostic Function. Each project has a diagnostic function which allows it to learn about a broad range of company problems. If a contractor team is aware of the function of the other projects he would be able to refer those problems beyond his own project's capability. The linkage of responses

to these problems basically is a project management issue. Though some coordination will take place informally, some formal mechanism should be encouraged. The Mission will explore this issue further and define its role in relation coordinating to project implementation.

7. Measuring Productivity. Very few Egyptian firms have the information capability of measuring productivity and attributing causal weights to individual factors. Without this ability it will be difficult to set targets for improvement and measure progress in achieving these targets.<sup>1/</sup> Since this problem affects all Mission projects designed to raise productivity, it will be important to incorporate programs in the Mission's package of industrial projects to increase industrial firms' ability to measure productivity gains consistently among projects.

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<sup>1/</sup> Nor do the majority of firms in the U.S. have such a capability, although the growing emphasis of increasing productivity is stimulating much interest in this subject (for example, see, Company Productivity: Measurement for Improvement, by Irving H. Siegel. The W.E. Upjohn Institute for Employment Research, 1980 and The Measurement and Interpretation of Productivity, National Academy of Sciences, 1979 [Chapter 8, "Measures of Productivity for Companies"]). However, as is becoming increasingly clear, programs to increase productivity at the firm level can be substantially strengthened by incorporating activities to develop even simple measures of productivity. (A good model exists in the vigorous activities undertaken by European countries and Japan, with the technical assistance of the U.S. Bureau of Labor Statistics, to study methods and measurement results of productivity improvement during the decade after WW II.)

CHARACTERISTICS OF PROJECTS FOCUSED ON  
INCREASING PRODUCTIVITY AT THE FIRM LEVEL

<u>PROJECT</u>	<u>DIAGNOSTIC</u>	<u>SERVICES</u>	<u>GENERAL</u>
Management Development For Productivity	Selects firms from sector, diagnose problems company and consultants identify that are impeding productivity. Focus generally on management problems but able to recognize others.	Selects critical mass of company managers in each company Provides management training to group and teaches around identified problems Provides consultancy services to group and company over period of one year to help resolve management problems identified in diagnostic.	Can call in outside expertise if problem is beyond capability of staff  Can refer to sources local and foreign who have expertise in management Firms can be referred into project by other sources.
Industrial Technology Application	Firms are provided diagnostic service aimed at technology base of company. Problems/opportunities are identified and discussed with company. Focus generally on technology but able to recognize others.	Provides diagnostic service to identify problems/opportunities Provides technological information and consultancy to resolve problems. Develop institutional capacity.	Has information system on resources available to client Can call in local and foreign expertise Can refer to other AID Science & Technology projects or projects associated with management/vocational training, etc.
Vocational Training For Productivity	Diagnoses productivity hindrances which can be resolved by training intervention. Able to identify management/technology problems as well but focuses on training assesses industrial manpower needs on a broader scale Performs job/task analysis in firms to develop appropriate curriculum.	Provides vocational training response to AD-HOC problem oriented needs of company. Develops capability to provides services within PVTD system Orients system to industry and upgrades services.	Diagnostic can refer to other projects when training is not problem Regional Council can market package of projects
Industrial Production Project	Provides overall diagnostic services to company Performs feasibility studies	Funds Purchase of capital equipment Provide technical advice Can provide management assistance	Can bring in expatriate assistance in special areas.

ASSESSMENT OF INDUSTRIAL TRAINING IN EGYPTBACKGROUND

Although twelve ministries (Education, Higher Education, Reconstruction and New Communities, Industry and Mineral Resources, Agriculture, Irrigation, Transport and Marine Transport, Communications, Health, Tourism, Mining, and Social Affairs) currently conduct vocational training programs, only four are directly concerned with providing the manpower needs of the industrial sector: the Ministry of Industry and Mineral Resources (MOI), the Ministry of Education (MOE), the Ministry of Higher Education (MOHE) and the Ministry of Reconstruction and New Communities (MRNC; formerly the Ministry of Housing). The MRNC conducts short-term semi-skilled training in the construction trades (carpentry, electricity, pipe fitting/plumbing, masonry, reinforcing steel work, and painting) through 12 existing training centers; by 1984 the number of centers will increase greatly to a total of 62, as 40 are being added in World Bank Loan Projects I and II. The World Bank is also adding three instructor training centers, one construction management center and six mobile construction trades training units in Projects I and II. The MRNC confines its training efforts to the construction trades and thus does not respond to the needs of other elements of the industrial sector, therefore this program will not be discussed further in this paper.

The MOHE, through its Technician Institutes, conducts two-year post secondary technician training programs in the following general areas: mechanical engineering, electrical engineering, drafting, electronics, engineering design, laboratory technician, industrial technician, and supervision. It is to be emphasized that these are technician level programs, not engineering level as some of the names imply. Training is not conducted in the basic skills or trades oriented to the needs of industry, which is the primary concern of this project, therefore this discussion will concentrate on the MOI and MOE training programs.

Vocational training programs are conducted by the MOI through its Productivity and Vocational Training Department (PVTD) and by the MOE through its three-year Industrial Secondary Schools and five-year Industrial Technical Schools. Each ministry operates training centers throughout the country, and each has an instructor training institute in Cairo. Neither training system responds adequately to the needs of the industrial sector. The MOI and MOE three-year programs draw their trainees from graduates of the preparatory schools (grade 9), although graduates entering the PVTD centers score substantially lower academically than those entering the MOE schools. They both grant certificates that permit entry into higher level education. However, for purposes of building a practical user-oriented industrial training system, the MOI/PVTD industrial program has several advantages. First, the PVTD courses are of a nature more specifically geared to the needs of industry, whereas, the MOE courses tend to be more general and theoretical in nature. One result of this is that the graduates of the MOI/PVTD program are generally in greater demand by the industrial sector than those of the MOE

## Annex G

programs. Second, since its establishment in 1957, with assistance from the International Labor Organization (ILO), the MOI/PVTD has developed ties with the industrial sector, both public and private. These ties, although currently weak, nonetheless provide a base upon which to build a potential strong relationship. The PVTD was created to train skilled and semi-skilled workers in the major trade areas for 116 public sector industrial firms, which in 1975 provided employment for approximately 560,000 people, or roughly one-half the total industrial labor force. The PVTD has been providing trained workers to public sector industry primarily through its three-year apprenticeship program which is comprised of one full year in-school training and two years combined in-school and in-plant training. Increasingly, the PVTD is also providing trained workers for private industrial firms, which employ approximately 600,000 persons. Nearly one-third of the PVTD apprentices for their in-plant training in private firms and, upon graduation, choose to remain there.

Third, though the PVTD program has been overly influenced by the rigidity of the formal education system, its program format does permit a flexible approach to the training of industrial workers. Greater varieties of program options and duration are possible. Entrance requirements can be made less stringent. Such modifications would attract students with a broad range of qualifications and vocational needs.

Given these advantages, it seems that the task of providing sufficient well-trained manpower to industry might be better achieved at least initially by upgrading the PVTD system rather than trying to redirect the MOE program.

#### CURRENT PVTD TRAINING PROGRAM

The PVTD operates thirty-six regional training centers and an Instructor Training Institute (ITI) in Cairo. It is also associated with ten in-plant training programs. Administrative control of the in-plant centers is held by the industrial firm itself, while the PVTD provides technical assistance. As discussed later in this paper, ten additional training centers plus six mobile skills training units will be financed by World Bank loans under their Education Projects I, II, and III. The ITI became operational in 1964 and currently has a staff of approximately 100 persons, including 25 instructors and seven engineers, and in recent years has graduated an average of 100 instructors and ten administrators annually. Another 100 managers, foremen and technicians from industry complete short courses every year, thus bringing total annual output for the ITI to approximately 200. The capacity of the ITI is estimated to be at least 500 although it is not presently operating anywhere near that capacity.

Through its training centers, the PVTD conducts three types of training activities which are described below.

1. The Apprenticeship System is a three-year skills training program. During the first year, training is conducted full-time in a center; the second year program is comprised of four days at an industrial plant and two days at the center each week; and the third-year weekly schedule includes five days at the plant and one day at the center. The trainees earn 25 piasters a day during their second year of training and 35 piasters a day during the third year. Trainees are admitted to the apprenticeship program upon completion of the preparatory or 9th grade level of formal schooling, and passing an oral and written examination. A wide range of specialized skills training is offered at the regional centers within the following general trade categories:

Machine Trades	Leather Processing
Welding	Chemistry
Sheetmetal	Glass Manufacturing
Auto Mechanics	Metallurgy
Electricity	
Refrigeration & Air Conditioning	
Pipe Fitting and Plumbing	
Printing	
Textile Production	

Entry into the Apprenticeship System is by comprehensive written and oral examination. Upon acceptance, a general area of training (i.e., Metals, Electricity, Auto Mechanics, etc.) is determined by psychological and aptitude tests. During the first ten weeks the trainee goes through an introductory or orientation period during which he receives a brief sampling of a number of different skills. At the end of the ten weeks, the instructors determine the specific skill area each trainee is to concentrate on. From that point on, the specialized skill area (lathe operator, fitter, etc) is frozen for the trainee.

In the recent years the apprenticeship training program has been turning out about 4,500 graduates each year.

2. The Accelerated Training System is designed to prepare semi-skilled workers through courses of various duration (four to 12-1/2 months). Trainees between 13 and 30 years of age are recruited from holders of the primary school certificate. Training is provided in manufacturing processes, metal trades, electricity and power tool operation. Although the PVTD continues to carry this activity as a matter of record, in actual fact the program at the present time is defunct, with no such training having been conducted since 1977.

3. The Upgrading Training System is also almost dead. It has been offered at only one training center since 1976, at Shubra Metals and Refrigeration, and enrollment has dropped off to six trainees in 1980. The program was developed to raise the technical level of workers and foremen through OJT and short-term courses of four to 16 weeks duration. Trainees must be able to read and write and have five years experience in their trade and in the handling and write and have five years experience in their trade and in the handling of related tools, machines and measuring apparatus.

Initiated 17 years ago, the training programs at both the ITI and the training centers have failed to adjust to the changing needs of Egypt's industrial sector. Programs, course structure and content are outmoded and irrelevant to the needs of industry. Too much emphasis is placed on long-term apprenticeship training, thereby inhibiting a short-term response to specific skill needs and precluding all but preparatory school graduates from skills training. Modern training technology and instructional materials and equipment are lacking in many instances.

The PVTD recognizes the serious problems that exist and is well aware of the urgent need for a viable, effective user-oriented program response to the manpower requirements of the industrial sector. Its training related activities need to be coordinated and integrated, and its organization and management needs restructuring and realignment. The skills of its technical and administrative staff need upgrading, particularly in areas of curriculum development, utilization of modern instructional methodology and technology, counseling and placement of trainees, and planning and programming. Programs and facilities for preparing instructors are inadequate. Linkage with the industrial sector must be strengthened. Inadequate financial resources, because of GOE salary regulations, limit instructor motivation and encourages them to take second jobs. The PVTD has requested assistance in overcoming these deficiencies.

The PVTD has weaknesses, but it also has strengths which should be noted. The first is experience; it has been in the business of vocational training for more than twenty years. Second, its staff members are relatively well-trained professionals whose esprit de corps and commitment to their institution are high. Third, both the Minister and the PVTD staff are totally committed to the success of this project.

#### OTHER DONOR ASSISTANCE

a. From 1957 to 1967:

In 1956, the GOE launched a 5-year plan for productivity and vocational training which called for the establishment of 18 vocational training centers. This same year, the Ministry of Industry was established. The PVTD came into being in 1957, with assistance from the ILO, at a time when the GOE introduced a program for rapid economic development through industrialization. Initially, the ILO agreement (of 1954) with the GOE called for assistance in improving productivity, training managers and supervisors, and developing OJT programs for workers. Except for some in-plant OJT, all activities took place within a Productivity and Vocational Training Center, utilizing space at the Special Technical School in Heliopolis.

In 1957, the ILO initiated two pilot training programs: an apprenticeship program in the metal trades at the Abu Zaabel Locomotive Repair

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Shops and a formal three-year apprenticeship course at the Heliopolis Center. Apprentices became entitled to a fixed allowance for their work and were bound to a three-year contract with their employers. After approximately 80 person months of ILO effort, both pilot activities were running successfully, and construction of four new training centers was underway.

In 1959, the four new centers entered full operation and the ILO shifted its attention to functional activities as opposed to trade divisions (i.e., concentration on specific skill areas gave way to supervisory, trade and instructor training and field supervision).

As the program expanded, the staff of the PVTD grew from less than 100 in 1957 to over 1,000 in 1961. The number of skilled workers in industry, from which instructors were drawn, was rapidly diminishing and the shortage of instructors became acute. At this point, the GOE turned to the United Nations Development Program (UNDP) for help in developing a vocational instructor training institute which was to become the ITI of the PVTD. Construction of the ITI began in 1963 and was operational by late 1964; the ILO provided assistance until 1967. During this period, a total of 991 persons were training at the ITI, of which 744 were instructors and the balance included supervisors, foremen, inspectors and technicians. After termination of ILO assistance in 1967. Egypt began a long period of isolation from Western industrial technology and methods of vocational training. Only recently has this isolation come to an end and new assistance begun to flow, re-equipping the centers in operation and constructing new ones.

Today, other donor assistance concentrates primarily on the provision of facilities, equipment, machinery, tools and furnishings, with only limited attention paid to technical assistance. The Government of Japan is providing \$3.2 million in machinery and equipment for a new center which will specialize in the training of mechanical, electrical and textile equipment maintenance personnel. The Federal Republic of Germany is providing \$500,000 to re-equip three automotive training centers.

The World Bank Education Projects I and II and the African Development Bank have granted loans totalling \$18.2 million to: 1) provide furnishings, machinery and equipment for ten existing training centers and the ITI; 2) construct and equip five new training centers; 3) replace equipment at six existing centers; and 4) provide equipment and technical assistance for the new industrial management training center being constructed by the PVTD at Ismailia. Another World Bank loan of \$11.5 million for the PVTD from Education Project III will become effective in 1981 and will provide for : 1) construction and equipping of five new training centers; 2) upgrading, expanding and equipping of eleven existing centers; 3) upgrading two industrial management training centers to the level of the Ismailia Center; and 4) supplying six mobile skills training units. The European Economic Community (EEC) will also contribute to the World Bank's effort by training

personnel and supplying equipment. The World Bank is presently drawing up plans for a Fourth Education Loan, which will further assist the PVTD. The International Labor Organization will provide assistance in developing the Industrial Vocational Training Center at the Tenth of Ramadan city, applying the Modules of Employable Skills system of training. Emphasis will be on meeting semi-skilled and skilled manpower needs in the "New Communities".

Although these donor inputs are essential to the effective operation of a vocational training program, they are not sufficient. What is missing are inputs that will prepare trained people to run the vocational system. This is a primary focus of this project. The technical assistance and training to be provided, along with certain essential commodities, will complement the assistance of other donors and increase the effective use of the assistance.

STATISTICAL DATA

Table 1

APPRENTICESHIP GRADUATES  
BY YEAR, 1968 - 1980

<u>YEAR</u>	<u>TOTAL</u>
1968	2,882
1969	2,158
1970	3,092
1971	2,860
1972	3,386
1973	3,641
1974	2,761
1975	3,050
1976	3,733
1977	4,713
1978	3,758
1979	4,416
1980	4,544

Table 2

TOTAL APPRENTICESHIP GRADUATES IN THE  
ALEXANDRIA AND MIDDLE DELTA REGIONS  
1968 - 1980

<u>Region</u>	<u>Graduates</u>	
	<u>Number</u>	<u>Percent of National Total</u>
All Egypt	44,994	100.0
Alexandria	10,498	23.3
Middle Delta	4,670	10.4

Table 3  
MOI/FVTD APPRENTICESHIP GRADUATES BY TRAINING CENTER  
1968 - 1980

<u>TRAINING CENTER</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>TOTAL</u> <u>68-80</u>
1. Dokki Metals	240	172	236	248	287	205	168	252	287	250	224	270	256	3,095
2. Imbaba Metals & Automotive	233	262	287	199	286	213	216	267	259	321	272	255	267	3,337
3. Manial Shiha Metals	-	-	-	-	-	-	-	-	-	72	85	78	89	324
4. Shubra Metals & Refrig.	246	115	183	195	396	308	189	135	309	351	254	290	412	3,383
5. Abassia Electrical	189	153	161	153	234	129	87	183	178	202	180	147	78	2,084
6. Wadi Hoff Metals	155	97	205	-	236	425	165	297	322	231	158	179	331	2,974
7. Wadi Hoff Automotive	-	-	-	-	-	-	150	85	123	159	76	201	154	940
8/9. El Amiria Metals & Elec.	-	-	-	-	-	-	-	-	-	-	153	113	298	564
*10/11 Torra Metals & Electrical	-	-	-	-	-	-	-	-	-	-	-	102	154	256
12. Shubra El Kheima Metals	158	106	127	239	235	275	153	188	192	334	199	281	255	2,742
*13/14 Tanta Metals & Electrical	153	117	89	178	208	221	186	145	172	228	183	169	181	2,230
15. El Mansoura Metals	91	35	109	169	143	186	89	153	175	182	99	183	175	1,789
16. Damietta Metals	-	-	74	54	80	53	58	51	58	76	9	105	33	651
17/18. Port Said Metals Auto-Elec.	168	137	130	-	-	-	58	22	17	98	124	166	110	1,030
19. Maharram Bey Metals	185	105	216	194	144	150	201	145	329	532	308	397	314	3,220
20. Maharram Bey Metals & Auto.	77	111	186	224	148	224	155	34	40	3	-	-	107	1,309
21. Victoria Electrical	139	155	162	164	83	124	114	71	125	199	86	119	130	1,671
22. Haqar El Nawatiya Metals	-	-	-	53	24	118	46	84	68	181	200	181	210	1,165
23. Victoria Metals	76	55	54	91	72	66	72	66	81	101	85	108	144	1,071
24. Maharram Bey Electrical	-	-	-	-	-	-	-	-	-	-	-	26	41	67
25. Assiut Metals	77	48	100	10	76	141	99	75	144	81	135	110	58	1,154
26. Kena Metals	74	16	72	49	21	21	33	32	72	63	89	97	60	699
27. Kom Ombo Metals	-	26	64	78	71	43	53	81	56	117	78	67	29	763
*28/29 Asswan Metals & Electrical	183	54	200	27	210	226	37	141	166	190	121	168	131	1,854
30. Cairo Printing	62	56	24	73	97	86	74	115	64	107	86	62	95	1,001
31. Alexandria Printing	45	4	20	34	51	21	52	25	30	38	24	64	37	445
32. Shubra Spinning & Weaving	141	100	195	68	80	162	92	146	174	161	207	168	99	1,793
33. Alex. Spinning & Weaving	18	15	9	32	20	89	63	97	116	167	102	100	103	931
34. Dan El Salam Fine Instruments	29	50	63	52	81	45	70	74	61	133	80	105	60	903
35. Alexandria Fine Mechanics	-	67	60	51	59	32	35	32	26	80	75	43	59	619
36. Kena Mining	143	102	66	42	44	78	46	54	89	56	66	62	74	922
<b>TOTAL</b>	<b>2,882</b>	<b>2,158</b>	<b>3,092</b>	<b>2,860</b>	<b>3,386</b>	<b>3,641</b>	<b>2,761</b>	<b>3,050</b>	<b>3,733</b>	<b>4,713</b>	<b>3,758</b>	<b>4,416</b>	<b>4,544</b>	<b>44,994</b>

\*Two Centers at one location are indicated by dual numbers.

Table 4

APPRENTICESHIP GRADUATES BY  
TRAINING CENTER FOR PERIOD 1968 - 1980

<u>TRAINING CENTER</u>	<u>NUMBER</u>	<u>GRADUATES</u> <u>% DISTRIBUTION</u>
1. Dokki Metals	3,095	6.88
2. Imbaba Metals & Automotive	3,337	7.42
3. Manial Shiha Metals	324	0.72
4. Shubra Metals & Refrig.	3,383	7.52
5. Abassia Electrical	2,084	4.63
6. Wadi Hoff Metals	2,974	6.61
7. Wadi Hoff Automotive	948	2.11
8/9. El Amiria Metals & Elec.	564	1.25
10/11. Torra Metals & Electrical	256	0.57
12. Shubra El Kheima Metals	2,742	6.09
13/14. Tanta Metals & Electrical	2,230	4.96
15. El Mansoura Metals	1,789	3.98
16. Damietta Metals	651	1.45
17/18. Port Said Metals, Automotive & Elec.	1,030	2.29
19. Maharram Bey Metals	3,220	7.15
20. Maharram Bey Metals & Automotive	1,309	2.91
21. Victoria Electrical	1,671	3.71
22. Hagar El Nawatiya Metals	1,165	2.59
23. Victoria Metals	1,071	2.38
24. Maharram Bey Electrical	67	0.15
25. Assiut Metals	1,154	2.56
26. Kena Metals	699	1.55
27. Kom Ombo Metals	763	1.70
28/29. Asswan Metals & Electrical	1,854	4.12
30. Cairo Printing	1,001	2.22
31. Alexandria Printing	445	0.99
32. Shubra Spinning & Weaving	1,793	3.98
33. Alexandria Spinning & Weaving	931	2.07
34. Dan El Salam Fine Instruments	903	2.01
35. Alexandria Fine Mechanics	619	1.38
36. Kena Mining	922	2.05
TOTAL	44,994	100.0%

Table 5

EMPLOYEES IN PUBLIC SECTOR COMPANIES,  
ALEXANDRIA REGION, BY INDUSTRY,  
JUNE 1 1981

<u>COMPANY</u>	<u>SPINNING</u>				
	<u>&amp; WEAVING</u>	<u>CHEMICALS</u>	<u>FOOD</u>	<u>METAL</u>	<u>MINING</u>
MISR Spinning & Weaving	18,514				
El Nasr Wool and Clothing	10,547				
National Spinning & Weaving	12,080				
United Arab Spinning & Weaving	10,607				
El Sharkia Hemp & Cotton	7,241				
MISR Rayon	6,655				
Misr Beida Dyers	4,566				
Carpets & Furniture	1,833				
Alexandria Spinning & Weaving	1,549				
El Seyouf Spinning & Weaving	6,234				
El Nasr Textile	5,163				
Egyptian Paper Industry		2,118			
National Paper		2,710			
Paper Industrialization		2,300			
Moharam Industrial Printers		2,471			
MISR Industrial Chemical		1,665			
Transportation & Engineering		1,723			
Egyptian Plastic and Elec.		1,545			
Nile Matches		1,896			
El Nasr Leather		1,191			
Abu Keir Fertilizer		1,500			
Dying and Chemicals		1,325			
Salt & Sod			4,571		
Alexandria Soap and Oil			4,137		
Oil Products			2,060		
Edfina for Conserved Food			1,376		
Alexandria for Confiture & Choco.			1,701		
El Masreya Starch and Yeast			1,574		
Copper				5,668	
El Nasr Forging				1,160	
Alexandria Shipyard				5,935	
Alexandria Metal Products				1,266	
El Nasr Electronic				1,147	
El Nasr Saltery					1,177
<b>TOTAL</b>	<b><u>84,989</u></b>	<b><u>20,444</u></b>	<b><u>15,419</u></b>	<b><u>15,176</u></b>	<b><u>1,177</u></b>

Table 6

EMPLOYEES IN PUBLIC SECTOR COMPANIES,  
MIDDLE DELTA REGION, BY INDUSTRY,  
JUNE 1 1981

<u>COMPANY</u>	<u>SPINNING &amp; WEAVING</u>	<u>CHEMICALS</u>	<u>FOOD</u>
MISR Spinning and Weaving	35,019		
El Nasr Dying	9,982		
Delta Spinning & Weaving	5,925		
MISR Shebin El Kom Spinning & Weaving	9,155		
El Nasr Spinning & Weaving	13,352		
Dakahlia Spinning & Weaving	6,486		
Tanta Hemp & Oil		922	
Financial & Industrial		1,180	
Kafr El Zayat Pesticides		608	
Tanta Oil & Soap			2,720
MISR Oil & Soap			1,288
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<b>TOTAL</b>	<b>79,919</b>	<b>2,710</b>	<b>4,008</b>

Table 7

COMPANIES AND TRAINING CENTERS  
LOCATED IN ALEXANDRIA REGION

<u>COMPANIES</u>	<u>PVTD</u>	<u>TRAINING CENTERS</u>	<u>COMPANY</u>
Alexandria Cement	Moharam Bey Metals		Alexandria Leather
El NASR Saltery	Moharam Bey Metal & Automotive		Alexandria Chemical
Abu Keir Fertilizer & Industrial Chemical	Victoria Electrical		
National Paper	Hagar El Nawatiya Metals		
Egyptian Paper Industry	Victoria Metals		
Mahmoudia Fine Spinning & Weaving	Moharam Bey Electrical		
Fine Spinning & Weaving	Alexandria Printing		
El Beida Dying	Alexandria Spinnin & Weaving		
Misr Rayon	Alexandria Fine Mechanics		
Dying Material & Chemicals			
Carpets & Furniture			
MISR Spinning & Weaving			
El Seyouf Spinning and Weaving			
United Arab Spinning and Weaving			
El Sharkia Hemp and Cotton			
El Nasr Wool and Clothing			
El Nasr Textile			
National Spinning & Weaving			
Alexandria Spinning and Weaving			
El Nasr Forging			
Alexandria Shipyard			
Alexandria Metal Products			
Copper			
El Nasr Electronic			
Edfina For Conserved Food			
Alexandria For Confitures & Chocolate			
El Masreya for Starch and Cleaners			
Salt and Soda			
Alexandria Soap and Oil			
Oil Products			
Egyptian Plastic and Electricity			
Transportation and Engineering Company			
Moharam Industrial Printers			

Table 7 (Cont'd)

COMPANIES AND TRAINING CENTERS  
LOCATED IN ALEXANDRIA REGION

<u>COMPANIES</u>	<u>PVTD</u>	<u>TRAINING CENTERS</u>	<u>COMPANY</u>
Paper Industrialization			
Nile Matches			
El Nasr Leather			
Misr Chemical			
Eastern Tobacco			
El Nasr for Tobacco & Cigarette Company			
Misr Milk & Food			
El Masreya Food			
El Nasr Bottle Filling			
Al Ahram Brewery			
National Plastic			
El Masreya Wood Industry			
Industrial Gas			
El Nasr Glass			

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Table 8

COMPANIES AND TRAINING CENTERS  
LOCATED IN MIDDLE DELTA REGION

<u>GOVERNORATES</u>	<u>COMPANIES</u>	<u>TRAINING CENTERS</u>	
		<u>PVTD</u>	<u>COMPANY</u>
Gharbia	El Nasr Fertilizer & Industrial Chemicals	Tanta Metal	Mehalla Metal
	Misr Spinning & Weaving	Tanta Electrical	Mehalla Electrical
	El Nasr Dying		
	Delta Spinning & Weaving		
	Tanta Soap & Oil		
	Tanta Hemp and Oil		
	El Nasr Bottle Filling		
	Misr Soap and Oil		
	Financial and Industrial Pesticides		
	Salt & Soda		
	Alexandria Oil		
Paper Industrialization			
Menoufia	Misr Shebin El Kom spinning and weaving		
Damietta	El Nasr spinning & weaving	Damietta metal	
Dakahlia	Dakahlia spinning & weaving	Mansoura metal	
	Dakahlia spinning		

Table 9

PVTD APPRENTICESHIP TRAINING PROGRAMS  
LOCATED IN PUBLIC SECTOR FACTORIES  
1977-78

<u>Center Name</u>	<u>Location</u>	Number of Trainees	Graduates* 1977-78
Helwan Metals	Helwan	155	45
Mehalla Metals	Delta	182	57
Helwan Electrical	Helwan	75	20
Mehalla Electrical	Delta	75	20
Helwan Metallurgical and Steel	Helwan	186	60
Cairo Leather & Tanning	Cairo	50	15
Alexandria Leather & Tanning	Alexandria	50	15
Cairo Glass	Cairo	50	15
Helwan Coke & Chemical	Helwan	125	35
Alexandria Chemical	Alexandria	<u>60</u>	<u>15</u>
		1008	297

\* Estimated, exact figures not available

Table 10

PVTD CENTERS GRADUATES OF ACCELERATED AND  
UPGRADING SYSTEMS,  
1975-1980

<u>Year</u>	<u>Accelerated</u>	<u>Upgrading</u>
1975	255	200
1976	103	---
1977	181	23
1978	430	27
1979	1100 <sup>1/</sup>	5

<sup>1/</sup> Special Program funded directly by the Ministry of Manpower and Vocational Training.

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Table 11

NUMBER OF STUDENTS, INSTRUCTOR TRAINING INSTITUTE,  
1975 - 1980

<u>Year</u>	<u>Students</u>
1975	145
1976	89
1977	78
1978	65
1979	70
1980	51

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Table 12

PRODUCTIVITY & VOCATIONAL TRAINING  
BUDGET

<u>Year</u>	<u>1st Section</u> <u>of the Budget</u> <u>(Salaries)</u> (.....000's of L.E.....)	<u>2nd Section</u> <u>of the Budget</u> <u>(General Expenses)</u>	<u>3rd Section</u> <u>of the Budget</u> <u>(New Projects)</u>	<u>Total</u> <u>Budget</u>
1975	1,133	160	309	1,602
1976	1,219	179	569	1,967
1977	1,317	170	566	2,053
1978	1,592	270	694	2,556
1979	1,842	267	2,487	4,596
1980	1,896	353	3,830	6,079

Table 13

NUMBER OF INSTRUCTORS IN SERVICE,  
APPOINTED, AND LEAVERS

<u>Year</u> (1)	<u>Number of Instructors In Service</u> (2)	<u>Number of Instructors Leaving</u> (3)	<u>Separation Rate (3)/(2)</u> (4)	<u>Newly Appointed Instructors</u> (5)
1975	864	34	0.039	16
1976	846	40	0.047	58
1977	864	35	0.041	60
1978	889	60	0.067	90
1979	919	50	0.054	20
1980	889	35	0.039	79
Average, 1975 - 1981	879	42	0.048	54

Table 14

INSTRUCTOR VACANT POSTS  
1980/1981

<u>Occupation</u>	<u>Vacancies</u>
Fitting	68
Pipe Fitting	7
Turning	15
Machining	18
Welding	23
Sheet Metal	17
Blacksmithing	14
Automechanic	4
Auto Electrician	3
Electrician	14
Industrial Equipment Electrician	18
Fine Mechanics	3
Radio & T.V.	2
Electronic & Electric Measuring Instruments	4
Electronics	2
Air-conditioning	1
Foundry	6
Textile	36
Printing	11
Tool & Die Making	<u>2</u>
 TOTAL	 266

Table 15

NUMBER OF ESTABLISHMENTS AND WORKERS  
IN ALEXANDRIA AND MIDDLE DELTA REGIONS  
1976

<u>Governorate</u>	<u>Public Sector</u>			<u>Private Sector</u>			<u>Government</u>
	<u>Estab.</u>	<u>Workers</u>	<u>Average</u>	<u>Estab.</u>	<u>Workers</u>	<u>Average</u>	<u>Establish- ments</u>
<b>Alexandria</b>							
Total	1,868	214,100	114.6	68,001	146,660	2.2	2,438
Manufacturing	290	142,246	490.5	-	-	-	-
<b>Middle Delta</b>							
Total	342	73,633	215.0	47,689	88,026	1.8	2,962
Manufacturing	74	63,923	863.8	-	-	-	-

Source: CAPMAS September 1976  
General Census of Inhabitant  
and Housing 1976.

Table 16

PRODUCTIVITY AND VOCATIONAL TRAINING DEPARTMENT  
AVERAGE ANNUAL TRAINING COST FOR APPRENTICES BY TRADE  
1978-1979

<u>Trade</u>	<u>1st year</u> <u>Cost LE</u>	<u>2nd year</u> <u>Cost LE</u>	<u>3rd year</u> <u>Cost LE</u>	<u>Total Cost</u> <u>for 3 years</u> <u>LE</u>
Fitter	153	25	29	207
Turner	202	25	36	263
Machinist	211	25	38	274
Welder	173	25	37	235
Blacksmith	153	25	38	216
Sheet Metal	150	25	34	209
Refrigeration	129	25	33	187
Heat Treatment	141	173	33	347
Tool and Die Maker	218	184	31	433
Motor Winding	148	25	30	203
General Electrician	150	25	29	204
Maintenance	152	173	31	356
Auto Mechanic	132	25	29	186
Electro-Mechanic	122	25	29	176





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Table 19

<u>ECONOMIC COST AND BENEFIT FLOWS</u>							
<u>(IN 1981 PRICES)</u>							
	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1995</u>	<u>TOTAL</u>
1. Investment Costs (\$ millions)	3.91	5.73	4.61	2.43			16.68
2. Increase in O&M Expenses <sup>a/</sup> (\$ millions)		0.38	0.55	0.72	0.88	0.88	10.45
3. IBRD funds for PVTD <sup>b/</sup> (\$ millions)	7.70						7.70
TOTAL	11.61	6.11	5.16	3.15	0.88	0.88	34.83
4. Present Value (1982) (\$ millions)	30.48						
5. Increase in Skilled Graduates <sup>c/</sup>							
Entry Level Training		750	1500	2250	2250	2250	27,000
Accelerated Training		1500	2500	3500	4500	4500	52,500
Retraining		<u>300</u>	<u>300</u>	<u>300</u>	<u>300</u>	<u>300</u>	<u>3,900</u>
TOTAL		2550	4300	6050	7050	7050	83,400
6. Estimated Skilled <sup>d/</sup> Wages less Shadow Wages (\$1976)		174	174	174	174	174	
7. Total Wage Benefits (\$ millions)		0.44	0.75	1.05	1.23	1.23	
8. Present Value of Wage Benefits <sup>e/</sup> (\$ millions)		6.17	10.52	14.72	17.25	17.25	203.91
9. Present Value (1982)	138.87						

a/ Increases in O&M expenses are for accelerated training and retraining only. O&M expenses for the entry level training are assumed to continue at the 1981 level.

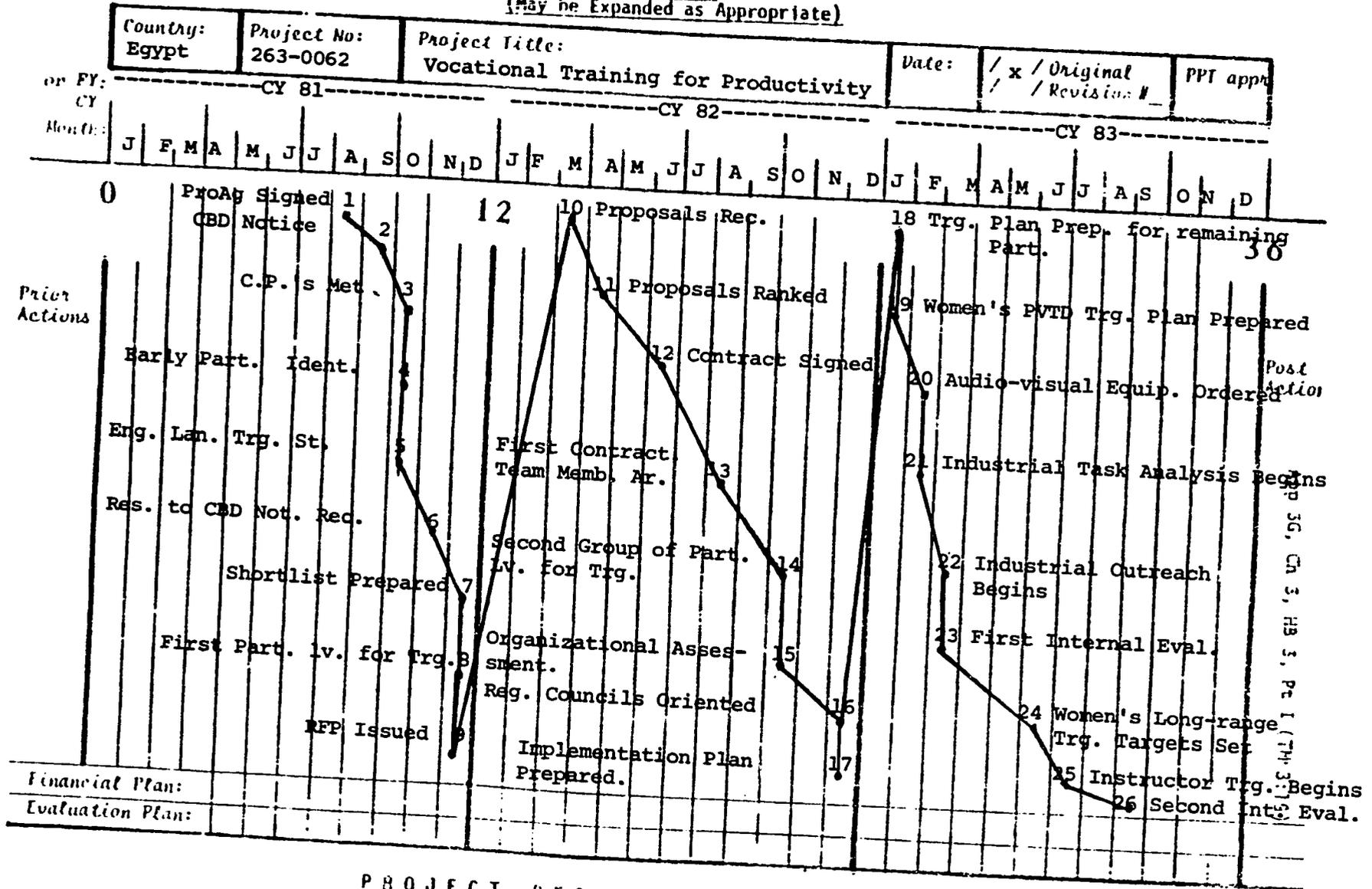
b/ Under the IBRD education loans #2 and #3, which include approximately \$26 million assistance to PVTD, \$7.7 million is earmarked for the purchase of training equipment for the existing centers. The new equipment directly complements this proposed technical assistance.

c/ In estimating skilled worker graduates under this project, it is assumed, due to lack of data, that the existing PVTD training program operates at 50% efficiency in providing training. This project will bring it up to 100%.

d/ Based on the ILO Study "Employment Opportunities and Poverty in a Changing Economy: Egypt in the 1980's". The shadow wage of an unskilled worker is estimated as the average annual wage of a farm laborers, which is given as LE 239 per year in 1976. The shadow wage earnings of skilled worker is estimated as the income of a craftman reported in the above study as LE 396 per year in 1976. The difference LE 157 (\$174) is taken as a proxy for the projected economic earning difference between skilled and unskilled workers. Although this measure is imperfect, given the absence of wage estimates for skilled and unskilled industrial workers, the proxy may be as good as any available. The proxy has not been updated to 1981 prices, because there is no suitable wage index with which to project it to 1981 and because the benefit-cost ratio even without the adjustment has been found to be large.

e/ Present value of wage benefits is discounted at 5% over 25 years of assumed average working life. The reason for the 5% discount rate is that costs and benefits are expressed in 1981 prices, and therefore the 5% discount rate corresponds to the 5% real interest rate, a reasonable rate for future rather than current consumption.

PPI FORM  
(May be Expanded as Appropriate)



PROJECT PERFORMANCE NETWORK



**PPT FORM**

Country:	Project No:	Project Title:	Date:	/x/ Original / / Revision #	Approved:		
Egypt	263-0062	Vocational Training for Productivity	7/15/8				
<b>CPI DESCRIPTION</b>							
<table border="0"> <tr> <td data-bbox="336 574 1131 1471"> <ol style="list-style-type: none"> <li>1. 8/81 ProAg Signed</li> <li>2. 9/81 CBD Notice</li> <li>3. 10/81 C.P.'s Met</li> <li>4. 10/81 Early Participant Training Identified</li> <li>5. 10/81 English Language Training Started</li> <li>6. 11/81 Responses to CBD Notice Received</li> <li>7. 12/81 Shortlist Prepared</li> <li>8. 12/81 First Participants Leave for Training</li> <li>9. 12/81 RFP Issued</li> <li>10. 3/82 Proposals Received</li> <li>11. 4/82 Proposals Ranked</li> <li>12. 6/82 Contract Signed</li> <li>13. 8/82 First Contractor Team Members Arrive</li> </ol> </td> <td data-bbox="1137 574 1961 1471"> <ol style="list-style-type: none"> <li>14. 10/82 Second Group of Participants Leave for Training</li> <li>15. 10/82 Organizational Assessment and Baseline Data</li> <li>16. 12/82 Regional Councils Oriented and their Programs Planned</li> <li>17. 12/82 Implementation Plan Prepared</li> <li>18. 1/83 Training Plan Prepared for remaining participants</li> <li>19. 1/83 Women's PVTD Training Plan Prepared</li> <li>20. 2/83 Audio-visual Equipment Ordered</li> <li>21. 2/83 Industrial Task Analysis Begins</li> <li>22. 3/83 Industrial Outreach Begins</li> <li>23. 3/83 First Internal Evaluation</li> <li>24. 6/83 Women's long-range Training Targets Set</li> </ol> </td> </tr> </table>						<ol style="list-style-type: none"> <li>1. 8/81 ProAg Signed</li> <li>2. 9/81 CBD Notice</li> <li>3. 10/81 C.P.'s Met</li> <li>4. 10/81 Early Participant Training Identified</li> <li>5. 10/81 English Language Training Started</li> <li>6. 11/81 Responses to CBD Notice Received</li> <li>7. 12/81 Shortlist Prepared</li> <li>8. 12/81 First Participants Leave for Training</li> <li>9. 12/81 RFP Issued</li> <li>10. 3/82 Proposals Received</li> <li>11. 4/82 Proposals Ranked</li> <li>12. 6/82 Contract Signed</li> <li>13. 8/82 First Contractor Team Members Arrive</li> </ol>	<ol style="list-style-type: none"> <li>14. 10/82 Second Group of Participants Leave for Training</li> <li>15. 10/82 Organizational Assessment and Baseline Data</li> <li>16. 12/82 Regional Councils Oriented and their Programs Planned</li> <li>17. 12/82 Implementation Plan Prepared</li> <li>18. 1/83 Training Plan Prepared for remaining participants</li> <li>19. 1/83 Women's PVTD Training Plan Prepared</li> <li>20. 2/83 Audio-visual Equipment Ordered</li> <li>21. 2/83 Industrial Task Analysis Begins</li> <li>22. 3/83 Industrial Outreach Begins</li> <li>23. 3/83 First Internal Evaluation</li> <li>24. 6/83 Women's long-range Training Targets Set</li> </ol>
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APP 35, CH 3, HB 3, Pt 1 (TM 3:19)

PPT FORM

<b>Country:</b> Egypt	<b>Project No:</b> 263-0062	<b>Project Title:</b> Vocational Training for Productivity	<b>Date:</b>	/ x/ Original / / Revision #	<b>Appvd:</b>
<b>CPI DESCRIPTION</b>					
<p>25. 7/83 Instructor Training Begins</p> <p>26. 9/83 Second Internal Evaluation</p> <p>27. 3/84 First External Evaluation</p> <p>28. 9/84 Third Internal Evaluation</p> <p>29. 3/85 Fourth Internal Evaluation</p> <p>30. 9/85 ITI Media Center Functioning</p> <p>31. 9/85 Second External Evaluation</p> <p>32. 3/86 All Curriculum Materials Completed</p> <p>33. 3/86 Participant Training Completed</p> <p>34. 3/86 Replication Plan Prepared</p> <p>35. 3/86 Fifth Internal Evaluation</p> <p>36. 5/86 All Equipment in Place</p> <p>37. 8/86 Final External Evaluation</p>			<p style="text-align: right;">122</p>		

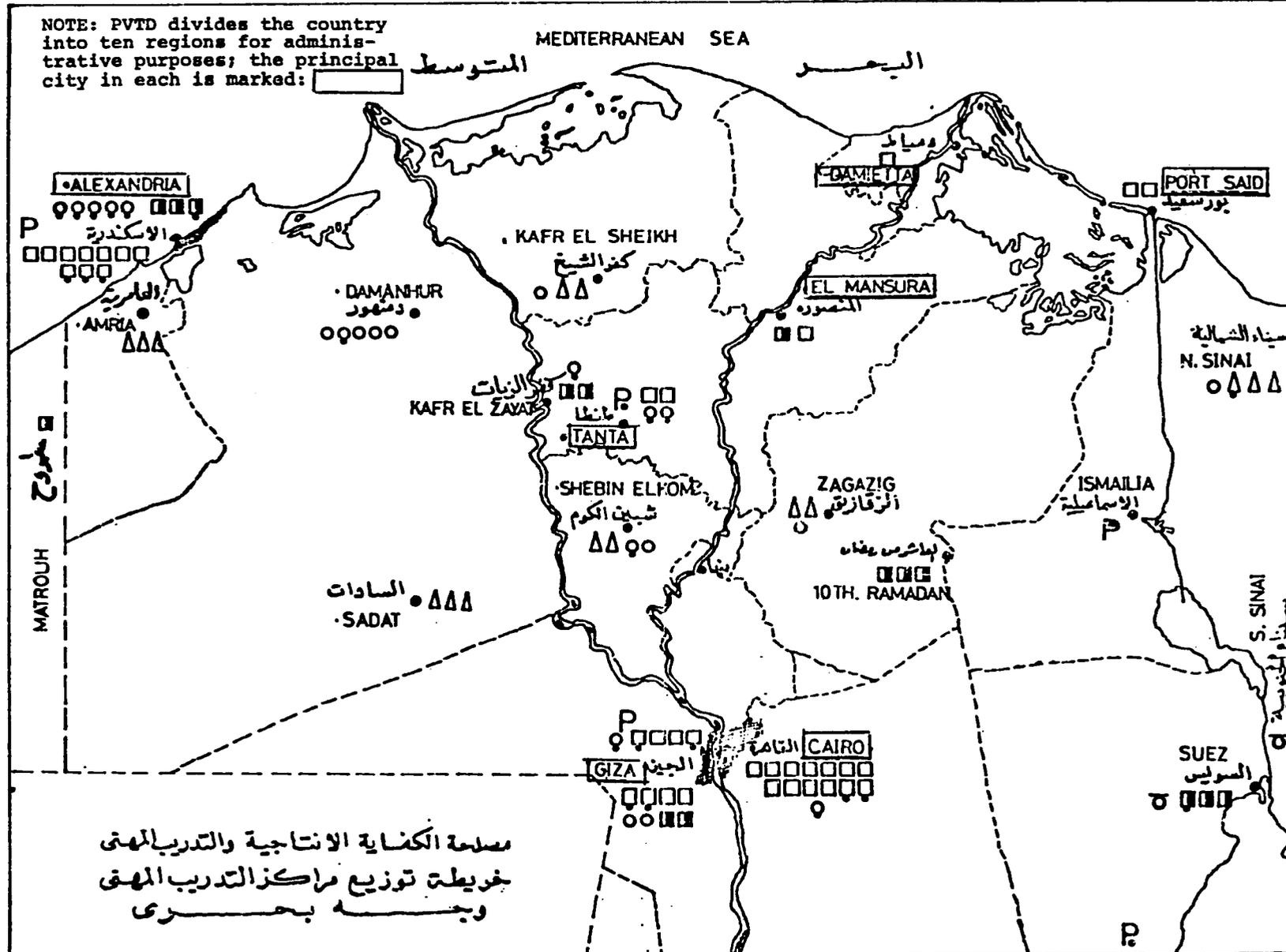
APP 36, Ch 3, HB 3, Pt 1 (TM 3:19)

PRODUCTIVITY AND VOCATIONAL TRAINING DEPARTMENT

Annex J

Distribution of Vocational Training Centers and Productivity Centers

PORTABLE	SPECIFIC	FUTURE PROJECTS	30/95 PLAN	UNDER CONSTRUCTION	EXISTING	TRAINING CENTRES
⊖ متنقل (مجم)	⊖ نوعي	○ شروط مستقبلية	△ خطة ٨٧/٨٨	⊖ تحت الانشاء	□ قائم	⊖ مراكز تدريب مهني ⊖ مراكز كفاية انتاجية PRODUCTIVITY CENTRES



## Annex K

## 5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual funding sources: Development Assistance (with a subcategory for criteria applicable only to loans); and Economic Support Fund.

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

A. GENERAL CRITERIA FOR PROJECT1. Continuing Resolution Unnumbered;  
FAA Sec. 634A; Sec. 653(b).

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

- a. Congress shall be notified in accordance with regular agency procedures.
- b. The intended obligation is within the level of funds appropriated for Egypt.

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

a. Yes

b. Yes

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance? N.A.
4. FAA Sec 611(b); Continuing Resolution Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973? N.A.
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project? N.A.
6. FAA Sec 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. N.A.
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of
- a. Through training of industrial workers to improve efficiency the project should increase exports and increase demand for industrial imports.
  - b. Project includes programs to strengthen private sector industrial skills.
  - c. Improve industrial skills should directly improve industrial efficiency.

international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).
9. FAA Sec. 612(b), 636(h); Continuing Resolution Sec. 508. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the

Project is supported by Egypt-U.S. Business Council, whose primary purpose is the encouragement of U.S.-Egyptian trade and investment. Project will contribute to industrial efficiency of potential Egyptian partners.

Egyptian contributions will be made in kind with local currency operating costs. Justification for U.S. financing of some project local currency costs is included in the project paper and the Request for Authorization of such financing in Annex L.

All U.S.-owned currency has been programmed. None is available for this project.

Yes

awarding of contracts, except where applicable procurement rules allow otherwise?

12. Continuing Resolution Sec. 522.  
If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

No

1. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

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

- a. Project will increase quality of training available to workers with minimum formal education using innovative instructional techniques. It will give special emphasis to assisting small scale, labor intensive firms largely in the private sector. The project will support a decentralized training system responsive to local needs.
- b. The project will increase training and employment opportunities for women as skilled workers.

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

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

N.A.

(1) [103] for agriculture, rural development; if so (a) extent to which activity is specifically designed to increase productivity and income of rural poor; 103A if for agriculture research; full account shall be taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made; (b) extent to which assistance is used in coordination with

N.A.

programs carried out under Sec. 104 to help improve nutrition of the people of developing countries through encouragement of increased production of crops with greater nutritional value, improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuffs; and the undertaking of pilot or demonstration of programs explicitly addressing the problem of malnutrition of poor and vulnerable people; and (c) extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution.

N.A.

(2) [104] for population planning under sec. 104(b) or health under sec. 104(c); if so, (i) extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and

N.A.

health posts, commercial distribution systems and other modes of community research.

(4) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development; and (ii) extent to which assistance provides advanced education and training of people in developing countries in such disciplines as are required for planning and implementation of public and private development activities.

(5) [106; ISDCA of 1980, Sec. 304] for energy, private voluntary organizations, and selected development activities; if so, extent to which activity is: (i) (a) concerned with data collection and analysis, the training of skilled personnel, research on and development of suitable energy sources, and pilot projects to test of suitable energy sources, and pilot projects to test new methods of energy production; (b) facilitative of geological and geophysical survey work to locate potential oil, natural gas, and coal reserves and to encourage exploration for

The project will substantially improve the Ministry of Industry's ability to provide non-formal training in the industrial sector, through its accelerated and on-the-job components. It will increase the relevance of the Ministry's formal vocational training programs. The trade test program will allow workers who have learned their skills informally, generally low income workers, to be certified at appropriate skill levels.

N.A.

potential oil, natural gas, and coal reserves; and (c) a cooperative program in energy production and conservation through research and development and use of small scale, decentralized renewable energy sources for rural areas;

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

(iii) research into, and evaluation of, economic development process and techniques;

N.A.

(iv) reconstruction after natural or manmade disaster;

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

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

c. [107] is appropriate effort place on use of appropriate technology? (relatively smaller, cost-saving, labor using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor.)

N.A.

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

Yes, in form of in-kind contribution, some local operating costs, and incentive payments to Egyptian counterparts.

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?

N.A.

f. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.

N.A.

g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

N.A.

2. Development Assistance Project  
Criteria (Loans Only)

N.A.

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

3. Project Criteria Solely for  
Economic Support Fund

a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

a. It will contribute to economic and political stability and reflects Section 102 policy directions.

b. FA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities?

No

## 5C(3) - STANDARD ITEM CHECKLIST

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

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

A. Procurement

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? Yes, as per standard AID procedures.
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him? Yes, except for local cash purchases as authorized.
3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will commodities be insured in the United States against marine risk with a company or companies authorized to do a marine insurance business in the U.S.? N.A.
4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If offshore procurement of agricultural commodity or product is to be financed, is there provision N.A.

against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)

5. FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates? Yes
  
6. FAA sec. 621. If technical assistance is financed, to the fullest extent practicable will such assistance, goods and professional and other services be furnished from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? Yes
  
7. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S. carriers will be utilized to the extent such service is available? Yes

8. Continuing Resolution Sec. 505.  
If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? Yes
- B. Construction
1. FAA Sec. 601(d). If capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interests? N.A.
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? N.A.
3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million? N.A.
- C. Other Restrictions
1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? N.A.
2. FAA Sec. 301(i). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? N.A.

3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?

Yes

4. Continuing Resolution Sec. 514. If participants will be trained in the United States with funds obligated in FY 1981, has it been determined either (a) that such participants will be selected otherwise than by their home governments, or (b) that at least 20% of the FY 1981 fiscal year's funds appropriated for participant training will be participants selected otherwise than by their home government?

Under this project, 25 percent of participant training months will be determined by public and private sector industrial employers, and Regional Consultative Councils of public and private industrial employers. In addition, it has been determined that the Mission's Peace Fellowships Program meets the standards set forth in the statute and that therefore appropriated participant training funds for participants selected otherwise than by the GOE will be well in excess of 20 percent of FY 1981 appropriated funds.

5. Will arrangements preclude use of financing:

a. FAA Sec. 104(f). To pay for performance of abortions as a method of family planning or to, motivate or coerce persons to practice abortions; to pay for performance of involuntary sterilization as a method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization?

Yes

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property?

Yes

- c. FAA Sec. 660. To provide training or advice or provide any financial support for the police, prisons, or other law enforcement forces, except for narcotics programs? Yes
- d. FAA Sec. 662. For CIA activities? Yes
- e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained. Yes
- f. Continuing Resolution Sec. 504. To pay pensions, annuities retirement pay, or adjusted service compensation for military personnel? Yes
- g. Continuing Resolution Sec. 506. To pay U.S. assessments, arrearages or dues. Yes
- h. Continuing Resolution Sec. 507. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending.) Yes
- i. Continuing Resolution Sec. 509. To finance the export of nuclear equipment fuel, or technology or to train foreign nationals in nuclear fields? Yes
- j. Continuing Resolution Sec. 510. For the purpose of aiding the efforts of the government of Yes

such country to repress the  
legitimate rights of the  
population of such country  
contrary to the Universal  
Declaration of Human Rights?

k. Continuing Resolution Sec.  
516. For publicity or propaganda  
purposes within U.S. not  
authorized by Congress?

Yes

## Annex L

RECOMMENDATIONS TO PURCHASE EGYPTIAN POUNDS  
WITH U.S. DOLLARS

Over the life of the Vocational Training for Productivity Project, \$3,142,000 will be used to support local currency expenditures. U.S. dollars provided by the project will be used to purchase Egyptian pounds, which will be made available to various Egyptian entity(s) responsible for project implementation for disbursement in accordance with the Project Agreement reached between USAID and the GOE. The LE funds will be used in association with the costs of travel, per diem, and shipment of household effects of project consultants; procurement of secretarial and translation services; project support such as travel of Egyptian participants; and other related miscellaneous expenses.

Under usual circumstances, the necessary local currency would be provided through either U.S. owned local currency or the GOE budget. However, U.S. owned local currency is fully programmed at this time and is not available for use in this project and the availability of GOE budget for the project is limited due to excessive demand over available resources. Given the critical importance of availability of local currency for implementation of the project and the fact that this project supports U.S. foreign policy and CDSS objectives, the Mission concludes that the above local currency costs should be funded with dollar purchased Egyptian pounds.

ISSUES RELATED TO WOMEN IN INDUSTRY

Rationale for Encouraging the Employment of Women

The Egyptian Government, in the National Charter of 1962, has stated its firm commitment to drawing women more effectively into the economically productive activities of the country. This presumably has a development rationale behind it, since development planners have long recognized the benefits that occur when women actively participate in the work force.

There can be several benefits. First, fertility rates drop as a result of delayed marriages and increased use of contraceptive methods. Bearing this in mind, the Higher Council for Family Planning in 1973 urged that the proportion of employed women in Egypt be raised to 20% of the total labor force by 1982. Second, women's income helps to raise living standards of families, particularly among those socio-economic groups where poor literacy levels, lack of work skills, and high fertility rates make it difficult for a single wage earner to expand his income level sufficiently to meet rising household demands. A recent study<sup>1/</sup> of a low income sample of Cairenes revealed that single households depended on an average of 2.2 sources of income, either through the earned incomes of more than one worker or by a single worker exploiting more than one resource. Research now in progress is suggesting that women's increments of income to the low income household produce more beneficial results in terms of development goals than an equal increment in a man's income. Her money tends to do toward medical services, educational benefits, home improvements and better nutrition while a man's added income is more likely spent on luxuries (cigarettes, recreation). An added benefit is that when she contributes to household sufficiency, a woman may make it possible for her children to be relieved of financial responsibilities thus allowing them to continue longer in the educational system.

A third major benefit from women's participation in the work force is that in a country like Egypt, where demographic factors<sup>2/</sup> produce a high incidence of widowed heads of household, providing employment opportunities for women helps to relieve the community and the extended family from the shared financial burdens of unproductive household units.

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1/ See Rugh, A. 1979 "Coping with Poverty in a Cairo Community," Cairo Papers in Social Science AUC.

2/ The common practice of men marrying women considerably younger than themselves combined with the lower life expectancy of males, means that the likelihood of a woman spending at least part of her adult life as a widow is very high.

Trends in Labor Force Participation of Egyptian Women

1. Low activity rate compared with other less developed countries (LDC) in the 50's and 60's:

A study<sup>3/</sup> using 1960 census figures reports that Egypt (along with other Middle Eastern countries) had lower female participation rates in non-agricultural economic activity when compared with a sample of 28 other developing countries. The sample group had a mean Economic Activity Rate<sup>4/</sup> of 12.3% but Egypt a rate of only 3.5%. When Egypt is compared with a sample of countries matched for a similar development level, women's Activity Rate was still low: 3.5% against the sample ratio of 16.9%. In Egypt, where 80% of manufacturing production takes place in factories, women made up only 2% of the factory work force. In non-factory production they made up only 6% of the work force. For the most part, their contribution is confined to those areas related to textile and the ready made clothing industry. By way of contrast, in professional fields women occupied 23% of all positions. Egyptian women's economic activity therefore shows serious imbalance when compared with other industrializing LDC's, showing weaknesses particularly in the industrial and manufacturing sectors.

2. Overall declining Economic Activity Rate until recently:

Since 1937<sup>5/</sup> there has been a general decline in the Economic Activity Rate of women in the labor force, with a low point reached some time in the early 1970's. A similar decline for men, however, suggests that the Egyptian economy during the period was unable to provide employment opportunities for an expanding and increasingly younger population. From 1972, there has been a reversal in the trend and a healthy upswing in the rates for both men and women. Table 1 demonstrates these tendencies. By 1976, however, the ratio of total population in the labor force had not yet reached 1937 proportions.

3. General decline in the Labor Force Participation<sup>6/</sup> Rate of women:

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<sup>3/</sup> Youssef, N. 1971 Social Structure and the Female Labor Force: The Case of Women Workers in Muslim Middle Eastern Countries Demography Vol. 8 #4 Nov. 1971.

<sup>4/</sup> Economic Activity Rate refers here to the ratio of female workers to total females of a particular population (in this case the age group 15 years and over).

<sup>5/</sup> Mabro, R. 1974 The Egyptian Economy 1952-1972 pinpoints the middle 1930's as the time when general shortages were replaced by labor surpluses.

<sup>6/</sup> Labor Force Participation Rate here refers to the ratio of females to males employed in a particular sector or in the labor force as a whole.

TABLE 1: LABOR FORCE\* ECONOMIC ACTIVITY RATES

<u>Year</u>	<u>Females %</u>	<u>Males %</u>	<u>Total %</u>
1937	7.9	65.1	37
1947	7.8	62.8	37
1960	4.8	55.2	30
1966	4.2	50.6	28
1970	3.5	49.5	26
1972	4.0	50.7	27
1976	9.2	52.9	31.5

Sources: Population Census 1937, 1960, 1966, 1976 and Labor Force Sample Surveys CAPMAS as found in ARE Economic Management in a Period of Transition VI May 8, 1978 Statistical Annex: World Bank. p. 5

\*Defined as people age 6 and over who are in the labor force.

Table 2 indicates employment by economic activity broken down by sex (1974). It demonstrates the present low rate of female participation in general, and in particular, in manufacturing (5.1%); electricity, gas and water (5%); in construction (1.3%); trade (4.8%) and in transport (2.8%). If one views the industrial sector over time, one finds a general decline in women's rate of Labor Force Participation from 1968 (5.7%) to 1973 (4.5%), with a small upswing (4.8%) in 1974<sup>7/</sup> similar to that seen in the Economic Activity Rates for women. Despite an overall increase in numbers of the industrial labor force as a whole, women's actual numbers decreased in that sector, from 78,100 in 1968 to 75,400 in 1974.<sup>7</sup> There is a similar decline in the Labor Participation Rate of women when tabulated against the total labor force: in 1960 8.1%<sup>8/</sup> of the total working force were women; in 1966, 7.5%;<sup>9/</sup> in 1969, 6.5%;<sup>10/</sup> and in 1974, 5.75%.<sup>11/</sup>

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<sup>7/</sup> Figures computed from ARE Yearbook 1977 Ministry of Information p. 199

<sup>8/</sup> Central Agency for Mobilization and Statistics, No. 66 May 1969 p. 127

<sup>9/</sup> Based on Statistics from the Yearbook of Labor Statistics 1974 Geneva

<sup>10/</sup> Fahmy, S. The Role of Women in Modern Egypt in Education and Modernization in Egypt 1972-3, Ed. Y. Kotb Ain Shams p. 78

<sup>11/</sup> See Table 2

**TABLE 2: EMPLOYMENT BY ECONOMIC ACTIVITIES BY SEX 1974**

('000s) (Percentages in brackets)

<u>Sex</u>	<u>Agriculture</u>	<u>Mining</u>	<u>Manufacturing</u>	<u>Electricity</u> <u>Gas Water</u>	<u>Construction</u>
M	4097	20	1285	38	229
F	101 (.024)	0 (0)	69 (.05)	2 (.05)	3 (.013)
T	4198	20	1354	40	232

<u>Sex</u>	<u>Whole Sale</u> <u>Retail</u> <u>Trade</u>	<u>Transport</u> <u>Storage</u> <u>Communication</u>	<u>Finance</u> <u>Insurance</u>	<u>Services</u>	<u>Unclassified</u>	<u>Total</u>
M	982	385	71	1216	39	8362
F	49 (.048)	11 (.028)	15 (.174)	246 (.168)	7 (.152)	503 (.057)
T	1031	396	86	1462	46	8865

Source: ARE Economic Management in a Period of Transition Statistical Annex Document of World Bank Vol. VI May 8, 1978.  
Corrections made in totals.

4. Women with low educational levels have a lower Economic Activity Rate:

The lowest Economic Activity Rate occurs for women who have attended primary school, presumably one of the main groups seeking industrial employment since there is usually a literacy requirement for industrial workers. Table 3 shows that by comparison the ratio of women who are employed is greater for illiterates, secondary school students and those who have attended higher educational institutions.

TABLE 3: EDUCATION - SPECIFIC LABOR FORCE RATES OF  
EGYPTIAN WOMEN IN NON-AGRICULTURAL ECONOMIC ACTIVITIES  
IN URBAN AREAS (1960)

<u>Levels of Education</u>	<u>Labor Force Participation Rate</u>
Illiterate	8.9
Primary	2.9
Secondary	24.4
Higher/Universities	70.5

Source: From Youssef, N. Education and Female Modernism in the Muslim World, Journal of International Affairs Vol. 30, No. 2 1976-77 p. 202

One must presume that either primary school education is not adequate preparation for the existing job opportunities at this level or that there are few available jobs or further non-formal training possibilities for the student of this education standard.

Attitudes and Barriers Relating to Women in Industry

On the basis of interviews and site visits in the Alexandria area, there appears to be a "quiet" revolution occurring in the area of female participation in the industrial labor force. The impetus for change has come neither from major socio-cultural shifts nor legislation but from a "demand" shift similar to that which occurred in the West during WWII and from a "supply" shift resulting from the economic pressures of inflation and increased consumption expectations.

On the demand side, the companies have, for the last fifteen years, employed women in gradually increasing numbers in clerical, laboratory, engineering and administrative jobs. At the general worker level, female employment was limited to jobs where female productivity was clearly superior to men's (jobs requiring excellent manual dexterity and patience), such as the ready made clothing production of the textile industry, where women represent about one-third of the workers and therefore, about one-sixth of

total industrial workers.<sup>12/</sup> In recent years with the increased production of electrical componetry (e.g. Philip's), the same skill attributes have opened new areas for women.

The shift in demand which more directly relates to the purposes of this project has been in areas where women are not viewed as having any inherent skill advantages and are the result of the labor mobility patterns prevailing in the region and within Egypt itself. The drain of skilled workers to overseas jobs has been accompanied by the increased production of private and semi-private companies, which offer higher salaries than the public sector and further drain off skilled manpower (and women power is the case of the textile industry). Where this has occurred and the jobs are such that heavy lifting is not the major activity, there appear to be no particularly negative socio-cultural barriers to be overcome, as has been implied in papers on female participation written before the current economic changes. Where secondary barriers, such as the law against women carrying an equal load by working night shifts in rotation, have occurred, the companies needing women have provided chaperones and transport to solve the situation.<sup>13/</sup> Other company officials who saw this as a limiting factor to increased female employment seemed surprised that the solution was that easy but will only be prompted to initiate it if their demand is sufficiently great to require it.

This does not mean that, depending on where shortages of male labor occur, that women will have access to all job categories. Heavy lifting is viewed as inappropriate and physically not possible for women. Work with dangerous gases and chemicals is equally viewed. It seems more likely that if shortages occur in these areas, men will be shifted within the companies from less physical labor jobs and women will move into the jobs thus opened.

Some employers have been understood to consider generous maternity leave provisions as a barrier to investment in training women. However, this attitude was not expressed in interviews with employers in connection with discussing the present project. In any event, the contractor will explore all perceived barriers including maternity leave policies to training and employing women in the skilled trades to determine how serious they may be and suggest managerial policies and planning techniques for overcoming or minimizing difficulties that are identified.

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<sup>12/</sup> Per M. Salama Ismail, Chmn. Alexandria Industrial Council, interviewed May 10, 1981.

<sup>13/</sup> The Government has just recognized this practice by now making women's night shifts legal for a particular company with government permission. (Egyptian Gazette, July 3, 1981).

On the supply side, there appeared to be no lack of applicants for the jobs available to women except in the textile industry. There, the turnover rate for skilled female labor is almost twice as great as that of men, reflecting a greater private industry demand. It is not improbable that men may begin to fill some of these "female" jobs in the future as Mehalla is having difficulty in finding women

In an earlier PP draft relating to industrial production<sup>2/</sup>, great emphasis was laid on the social-cultural obstacles to women's employment. In summary, the PP stated that since a woman was still expected to fully fulfill the homemaking mothering role she was reluctant to add a job to these already full time tasks. While this may be a barrier if the women already are established in their homes, from talking with the various companies it appears that women now begin working before marriage and children and that the turnover rate because of marriage and children is not substantially higher than the men's rate (to change jobs). Several people hypothesized that the fact that a woman had a job made her more marriageable, presumably to those men who value economic well-being at least equally with traditional homekeeping. Since income can be translated into labor saving devices and purchase of services (clothes washing) the conflict may have been more real before neighborhood role models existed to demonstrate the viability of the working wife.

Segregation of women in the work place and supervision restricted to women, a requirement also dwelt on in past literature, was not in effect in any factory observed except the Mehalla Textile Company where all-female production units for ready made clothes are the norm. However, even there, the workshop for handicapped/physically debilitated workers mixed healthy female trainees with handicapped men. In the other companies female and male workers worked side by side and supervision was both male and female. All of the individuals interviewed claimed that supervisors promoted from within the ranks were promoted according to merit. Thus if a workshop has all workers of one sex the supervisor will be of the same sex if promoted from within or of either sex if a university graduate (usually an engineer) if appointed from without.

It was clear from a number of conversations that while women and men over 17 are considered mature enough to mix in the workplace, that during the apprenticeship period, 14-17, sufficient adult supervision to prevent "incidents" was required. Classes and apprenticeship situations can be either physically segregated or a sufficient number of adults on hand to keep track of the young ladies. This is potentially an area in the training centers where an adult woman, unrelated to the actual instruction, could serve as a chaperone.

In summary, the major obstacles to increasing women's participation in the skilled labor force which in the past were considered to be reasons to exclude them from most PVTD programs seem to be crumbling in the face of economic change. PVTD is in the position and seems to be disposed toward

taking advantage of the changing climate. In the Delta region there are plans to have both a chemical and electronics program for women. In Alexandria the new chemical center, to be opened in two years, is expected to have mostly female trainees. There is also a willingness to train women in fine mechanics (calibration, electronics and fine metal work) if the problem of chaperonage and instructor shortages can be overcome.

DRAFT PROJECT DESCRIPTION FOR PROJECT AGREEMENT

The project will assist the Grantee to (1) revise the curriculum, training materials and instructional methodology utilized in the Productivity and Vocational Training Department regional training centers; (2) inaugurate an industrial outreach program to inform employers of training services provided by the PVTD and assist them in designing and implementing company level training programs; (3) establish procedures and mechanisms, including the Regional Consultative Councils, to link training programs closely with the needs of industrial employers; (4) establish model skill standards and tests; and (5) assist the PVTD to establish an appropriate management and support system for a user-oriented decentralized training organization.

The project will be implemented by The Productivity and Vocational Training Department of the Ministry of Industry and Mineral Resources. The PVTD will be provided with technical assistance, participant training, and commodities under the grant. The project will ensure simultaneous training of Egyptian staff, the development of revised training programs, and the delivery of training services to Egyptian industry.

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TAGS:

SUBJECT: VOCATIONAL TRAINING FOR PRODUCTIVITY (263-0062)  
 PROJECT IDENTIFICATION DOCUMENT REVIEW BY THE NEAR EAST  
 ADVISORY COMMITTEE

1. NEAC ON MARCH 31 APPROVED SUBJECT PID PROPOSAL FOR  
 DEVELOPMENT AS PROJECT PAPER. WE SUGGEST MISSION. IN  
 DEVELOPING PP, CONSIDER THE FOLLOWING:

A. PROBLEM TO BE ADDRESSED - WE BELIEVE DESCRIPTION OF  
 PROBLEM AS STATED IN PID IS OVERLY BROAD AND GENERAL. THE  
 PP SHOULD GIVE A MORE PRECISE STATEMENT OF PROBLEM TO BE  
 ADDRESSED. WHAT IS NEEDED IS AN ANALYSIS OF THE CURRENT  
 SKILLS TRAINING SYSTEM IN EGYPT AND HOW THOSE SKILLS  
 CURRENTLY PROVIDED, RELATE TO THE TRAINING MANDATE OF THE  
 MINISTRY OF INDUSTRY AND MINERAL RESOURCES (MOIMR). THE  
 ANALYSIS SHOULD CONSIDER CONSTRAINTS TO TRAINING, WEAKNESSES  
 IN THE CURRENT TRAINING APPROACH, WHO OBTAINS TRAINING AND  
 WHERE, TRAINING COSTS, THE TRAINING ROLE OF INDUSTRY, THE  
 REASONS FOR SHORTAGES IN CERTAIN SKILLS, AND WHETHER  
 SHORTAGES ARE FOR SKILLED OR FOR SEMI-SKILLED WORKERS.  
 THE PRIME INSTITUTIONAL DEFICIENCIES WHICH PREVENT MORE

EFFECTIVE TRAINING SHOULD BE IDENTIFIED ALONG WITH THE  
 QUANTITATIVE DIMENSIONS OF THE PROBLEM IN ORDER FOR THE  
 MAGNITUDE OF THE PROJECT TO BE DETERMINED. SHORTAGES  
 AND PROBLEMS SHOULD BE DISCUSSED IN TERMS OF SHORT  
 OR LONG TERM EXPECTATIONS AND WHETHER ADJUSTMENTS CAN  
 BE MADE FOR CORRECTION OF THESE SHORTAGES AND PROBLEMS  
 OR WHETHER THEY CAN BE EXPECTED TO CONTINUE. NEAC  
 NOTED PROJECT DESIGN INCLUDES A SKILLS NEED ASSESSMENT  
 BUT SUCH ASSESSMENT SEEMS TO BE A MECHANISM TO FINE  
 TUNE PROJECT INPUTS AFTER THE IMPLEMENTATION RATHER  
 THAN A DEVICE TO ASSIST IN PROJECT DESIGN.

B. BENEFICIARIES - THE PP SHOULD CLARIFY THE TARGET  
 GROUP OR GROUPS TO BE TRAINED. THE PID IMPLIES THAT  
 THE MAJOR PORTION OF THOSE TO BE TRAINED DURING THE PRO-  
 JECT ARE FROM THE SAME GROUP WHICH NOW SUPPLIES TRAINEES  
 FOR THE MOIMR TRAINING CENTERS. FOR THE PROJECT TO  
 HAVE A DISCERNABLE QUALITATIVE IMPACT, IT IS NECESSARY  
 FOR A TRAINEE PROFILE TO BE DEVELOPED. IN ADDITION,

CRITERIA FOR THE SELECTION OF TRAINEES SHOULD BE IDENTIFIED FOR BOTH THE SHORT COURSES, AND APPRENTICESHIP TRAINING. A CLARIFICATION OF THE MECHANISM TO BE USED FOR THE IDENTIFICATION AND PLACEMENT ALSO SHOULD BE FORMULATED. THE DESIGN TEAM SHOULD EXAMINE THE EXISTING ENTRY LEVEL REQUIREMENTS FOR TRAINEES TO DETERMINE WHETHER THE ENTRANCE REQUIREMENTS FOR THE APPRENTICESHIP COURSE ARE THE MOST SUITABLE. RATHER THAN RELY ON THE PREPARATORY LEVEL OF THE FORMAL SCHOOL AS A SCREENING DEVICE FOR ENTRANCE INTO TRAINING PROGRAMS, A BATTERY OF TESTS OR OTHER CRITERIA MIGHT BE USED TO ENCOURAGE THOSE WHO MAY HAVE THE APPETITE BUT NOT THE FORMAL SCHOOL OPPORTUNITIES TO ENTER THE MOIMR VOCATIONAL SYSTEM. THE ADEQUACY OF THE AGE LEVELS SHOULD BE INVESTIGATED ALONG WITH THE PAUCITY OF FEMALE TRAINEE CANDIDATES. THE JOB TRAINING COMPONENT SHOULD BE CONSIDERED FULLY IN TERMS OF PROJECT FOCUS AND THE LEVEL OF SKILL TRAINING EXPECTED FOR THIS GROUP.

C. WOMEN - THE PP SHOULD SPECIFICALLY ADDRESS THE ISSUE OF INCLUDING WOMEN IN THE SKILLS TRAINING ENVISIONED BY THE PROJECT. THIS PROJECT, WHICH PRESUPPOSES A NATION-WIDE VOCATIONAL TRAINING SYSTEM, SHOULD EXAMINE CAREFULLY WHERE AND HOW THE TRAINING OF WOMEN IS INTEGRATED INTO THIS SYSTEM, GIVEN THE ACTIVE PRESENCE OF EGYPTIAN WOMEN IN THE INDUSTRIAL

LABOR FORCE, AND THEIR INCREASING RATES OF ENTRY. THIS PROJECT NOT ONLY AFFORDS THE OPPORTUNITY TO SHOW THE WAY FOR INVOLVING MORE WOMEN INTO SKILLS TRAINING BUT SHOULD PLAY A ROLE IN ASSURING WOMEN AN EQUITABLE PLACE IN EGYPT'S OVERALL PLAN FOR VOCATIONAL TRAINING. CONVERSELY, THIS PROJECT SHOULD ASSURE THAT ITS OUTCOMES WILL NOT ADVERSELY AFFECT THE ROLE OF WOMEN IN INDUSTRY. THE PP SHOULD EVALUATE DATA CONCERNING THE EMPLOYMENT OF WOMEN IN INDUSTRY THROUGH THE REVIEW OF EXISTING REPORTS AND ANALYSIS AND THROUGH SUCH FIRST HAND TECHNIQUES AS INTERVIEWING EMPLOYERS TO DETERMINE CURRENT HIRING AND TRAINING PRACTICES; IDENTIFY CONSTRAINTS BOTH FROM A DEMAND AND SUPPLY SIDE; AND EXPLORE THE MECHANISMS BY WHICH THIS PROJECT CAN ALLEVIATE CONSTRAINTS TO WOMEN'S TRAINING AND EMPLOYMENT OPPORTUNITIES. THE MECHANISMS OR APPROACH FOR INTEGRATING WOMEN IN PROJECT IMPLEMENTATION SHOULD BE SPELLED OUT IN DETAIL.

D. REPLICATION - ASSUMING THE MODEL IMPLEMENTED BY THE PROJECT PROVES TO BE A VIABLE ONE, THE PP DESIGN SHOULD CONSIDER THE INCLUSION OF A PLAN FOR A TRANSITIONAL MECHANISM WHICH COULD BE USED FOR INITIATING A NATION-WIDE SYSTEM OF TRAINING.

F. GOE FINANCIAL SUPPORT - THE PID SPECIFIES INADEQUATE

FINANCIAL RESOURCES AS A SERIOUS PROBLEM TO THE TRAINING PROGRAMS RUN BY THE PRODUCTIVITY AND VOCATIONAL TRAINING CENTER (PTVC) OF THE MISSION. THE PID ASSUMES THAT ADEQUATE FINANCING BY THE MOIMR WILL BE FORTHCOMING AT LEAST UNTIL SUCH TIME AS NOW PENDING NATIONAL TAX LEGISLATION WOULD SUPPORT THE PROGRAM. THIS FINANCING WOULD COVER INCREASED COSTS TO RUN THE TRAINING PROGRAMS IN THE TWO REGIONS CONCERNED WITH THE PROJECT INCLUDING INCENTIVE PAY FOR CENTER INSTRUCTORS. IF ADEQUATE FINANCING WAS A PROBLEM IN THE PAST, SOME ASSURANCE SHOULD BE GIVEN BY THE MOIMR THAT THIS ACTIVITY WILL RECEIVE SUFFICIENT FINANCIAL SUPPORT. FURTHER TO THE ISSUE OF FINANCIAL SUPPORT, THE EFFECT OF THE TAX ON EGYPTIAN INDUSTRY CONTEMPLATED TO SUPPORT A NATION-WIDE SYSTEM OF TRAINING SHOULD BE INVESTIGATED. NEAC ALSO QUESTIONED ADVISABILITY OF INSTITUTING A TAX WHICH IS BASED UPON LABOR INPUTS AS THIS RUNS COUNTER TO AID'S CONCERNS WITH EMPLOYMENT AND APPROPRIATE FACTOR PRICING. IF THE TAX ON INDUSTRY IS AN INDESPENSIBLE

PART OF THE PROJECT OR THE INTENT OF THE PROJECT SHOULD THERE BE A CONDITION PRECEDENT TO ASSURE PROMULGATION OF SUCH A TAX? IF THE MISSION CONSIDERS A CP UNREALISTIC FOR THIS ASPECT OF THE PROJECT WOULD A COVENANT BE MORE APPROPRIATE? IF A COVENANT IS SELECTED IT WOULD REQUEST THE CLOSEST POSSIBLE INDUSTRY COOPERATION AND PARTICIPATION DURING THE IMPLEMENTATION OF THE PROJECT. HOWEVER THE PP SHOULD SPELL OUT EITHER A REVENUE SOURCE OR A BUDGETARY SOURCE AS THE EGYPTIAN SUPPORT TO THE PROJECT.

F. GEOGRAPHIC REGIONS - THE PP SHOULD CONTAIN THE RATIONALE FOR THE SELECTION OF ONLY TWO REGIONS FOR CONDUCTING THE EXPERIMENTAL MODEL. WILL TWO REGIONS PROVIDE AN ADEQUATE EXPERIMENTAL BASE TO DRAW CONCLUSIONS FOR A NATIONWIDE PROGRAM? WOULD MORE THAN TWO INDUSTRY TRAINING CENTERS PROVIDE A MORE ADEQUATE BASE IN VARIOUS INDUSTRIAL SECTORS FOR JUDGING/RECOGNIZING THE VALUE OF THE MODEL? HOWEVER NEAC NOTED THAT A MORE FLEXIBLE USE OF COMPANY CENTERS MIGHT UNDULY COMPLICATE THE PROJECT. ADVANTAGES AND DISADVANTAGES TO GREATER USE OF COMPANY TRAINING CENTERS SHOULD BE EXAMINED.

G. IMPLEMENTATION AND EVALUATION - THE PID DID NOT INCLUDE AN IMPLEMENTATION PLAN OUTLINE NOR AN INDICATION OF THE TYPE OF ENTITY THOUGHT TO BE BEST AS THE IMPLEMENTING AGENT. THE PID ALSO DID NOT MENTION AN EVALUATION PLAN OR INCLUDE FUNDING FOR OUTSIDE EVALUATIONS. THE EVALUATION OF THIS PROJECT SHOULD BE GIVEN PARTICULAR ATTENTION BECAUSE IT INVOLVES THE ESTABLISHMENT OF A MODEL AND THE POSSIBLE REPLICATION OF THAT MODEL. AID/W ASSISTANCE IS AVAILABLE TO THE MISSION FOR THE PREPARATION OF A SUITABLE EVALUATION PLAN.

H. PARTICIPANT TRAINING - THE PARTICIPANT TRAINING COMPONENT TO TAKE PLACE IN THE U.S. IS VERY SMALL IN RELATION TO THE APPARENT TRAINING NEEDS REQUIRED BY

THE PROJECT. THE PP SHOULD PROVIDE A RATIONALE FOR THE PARTICIPANT TRAINING COMPONENT.

1. RESOURCE MATERIALS - VARIOUS MATERIALS ARE AVAILABLE IN AID/W REGARDING PAST AID EFFORTS IN TRAINING AREAS PERTINENT TO THIS PROPOSAL. THEY HAVE BEEN DESCRIBED TO RICHARD ROBERTS AND JAMES HAYBYRNE AND MADE AVAILABLE

FOR THEIR USE. THESE MATERIALS WILL ALSO BE DISCUSSED WITH AND SHOWN TO DALE DEBUTTS, THE PROSPECTIVE PSC TECHNICAL EXPERT WHO ALSO WILL ASSIST THE MISSION IN THE PREPARATION OF THE PP. NE/TECH IS FOCUSING TO THE MISSION FOR ITS CONSIDERATION A PAPER PREPARED BY PPC (FRANK METHOD) CONCERNING THIS PROJECT. ROBERTS AND HAYBYRNE HAVE COPIES OF THIS PAPER. HAIG

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## memorandum

DATE: May 19, 1981

REPLY TO  
ATTN OF: NE/PD/PDS, Stephen F. Lintner, *SFL*  
Bureau Environmental CoordinatorSUBJECT: EGYPT - Vocational Training for Productivity - Project  
Identification Document (263-0062) - Environmental ClearanceTO: NE/TECH/HRST, Thomas McDonough,  
Project Chairperson

The subject proposed project is exempted from environmental analysis by the provisions of 22 CFR 216.2 (c) Categorical Exclusions (2) (i), "A.I.D. Environmental Procedures".

cc: GC/NE, T. Carter  
AID/Cairo, W. McAleer, Mission Environmental Officer  
AID/Cairo, L. M. Hager, Senior Legal Adviser