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INTERNATIONAL DEVELOPMENT

COOPERATION AGENCY

AGENCY FOR INTERNATIONAL DEVELOPMENT

Washington, D.C. 20523

PROJECT PAPER
EGYPT

VEHICLE MAINTENANCE TRAINING

PROJECT NO. 263-0114

GRANT

1980

UNCLASSIFIED

PROJECT DATA SHEET

A = Add
C = Change
D = Delete

CODE: 3

2. COUNTRY/ENTITY: Egypt

3. PROJECT NUMBER: 263-0114

4. BUREAU/OFFICE: Near East — 03

5. PROJECT TITLE (maximum 40 characters): VEHICLE MAINTENANCE TRAINING

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 09 DD 30 YY 83

7. ESTIMATED DATE OF OBLIGATION (Under B. below, enter 1, 2, 3, or 4)
A. Initial FY 80 B. Quarter 2 C. Final FY 80

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

A. FUNDING SOURCE	FIRST FY 80 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total	3,900	600	4,500	3,900	600	4,500
(Grant)	(3,900)	(600)	(4,500)	(3,900)	(600)	4,500
(Loan)	( )	( )	( )	( )	( )	(
Other U.S. 1.						
Other U.S. 2.						
Host Country		2,400	2,400		2,400	2,400
Other Donor(s)						
TOTALS	3,900	3,000	6,900	3,900	3,000	6,900

9. SCHEDULE OF AID FUNDING ($000)

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

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 digits) 11. SECONDARY TECH.

620 635 640 730

12. SPECIAL CONCERNS CODES (maximum 8 codes of 4 digits)

A. [illegible]
B. [illegible]

13. [illegible]

To upgrade the skills and improve the work habits of vehicle maintenance workers.

14. SCHEDULED EVALUATIONS

Interim MM 11 YY 82 MM 12 YY 82 Final 12 1 8[illegible]

15. AMENDMENT: NATURE OF CHANGE (CODE) [illegible]

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17. APPROVED BY

Signature

Title: Mission Director

Date Signed MM 03 DD 04 YY 80

18. [illegible] MM DD YY 04/14/80

AID 1330-4 (8-79)

USAID PROJECT REVIEW COMMITTEE

1.	Dale DeButts, Project Officer	EHS/EM
2.	Richard McClure	CON
3.	George Landato	PROG
4.	John Chang	PROG/ECON
5.	Bunyan Bryant	LEG
6.	Richard Williams	IIDPS
7.	Robert Brandt	TNG
8.	Hans Bang	CI

AID/W PROJECT REVIEW COMMITTEE

1.	Thomas McDonough, Chairperson	NE/TECH/HRST
2.	Michael Lukomski	NE/TECH/HRST
3.	Ramon E. Flores	NE/TECH/HRST
4.	Bert Porter	NE/EI/E
5.	Sid Chernenkoff	NE/DP
6.	Richard Fraenkel	NE/TECH/SA
7.	Ted Carter	GC/NE
8.	James Politte	NE/PD/PDS
9.	Rance Looper	COM/NE

USAID PPOJECT APPROVAL OFFICER

1.	Donald Brown	Mission Director

VEHICLE MAINTENANCE TRAINING
263-0114
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I. SUMMARY AND RECOMMENDATIONS

A. PROJECT TITLE: Vehicle Maintenance Training

B. PROJECT NUMBER: 263-0114

C. GRANTEE: The Government of Egypt (GOE)

D. COORDINATING AGENCY:

The Ministry of Manpower and Vocational Training (MOM)

E. IMPLEMENTING AGENCY:

The General Syndicate for Land Transport (GSLT)

F. AMOUNT: U.S.$ 4.5 million

G. TERMS: Grant. All funds to be obligated in FY 1980.

H. LIFE OF PROJECT:

Three (3) years. Contractor activity, under a host country contract with the GSLT, to be initiated in FY 1980.

I. TOTAL PROJECT COST:

U.S. $6.9 million. The GOE contribution is estimated at the dollar equivalent of U.S. $ 2.4 million, or 35.2% of total project cost.

J. GOAL: To improve the quality of bus and truck transport services provided to the public.

K. SUB-GOAL: To increase the efficiency of vehicle maintenance systems.

L. PURPOSE: To upgrade the skills and improve the work habits of vehicle maintenance workers.

M. STRATEGY:

The project will result in the establishment of a heavy vehicle maintenance training center in the Mataria district of Cairo. The center will be owned and operated by the GSLT and serve the training needs of the nine major Egyptian public sector bus and truck transport companies. These companies currently employ approximately 5,000 vehicle maintenance workers who are classified as mechanics. When fully operational the GSLT training center will provide training in over 20 key vehicle maintenance occupation/trade areas for 540 mechanics each year.

N. THE GSLT: The GSLT is a national labor union representing both public and private sector land transport workers. With over 352,000 members, it is the largest Egyptian labor union operating under the authority of the General Trade Union of Egypt. In addition to its concern for the welfare of its members, the GSLT is interested in upgrading the skills of workers in the land transport sub-sector.

O. PROJECT OUTPUTS: To provide the desired training the GSLT requires, among other things: a physical facility with adequate space for shops, classrooms, storage and administration; an appropriate curriculum; equipment, tools, training aids and instructional materials; qualified instructors, administrators and other support staff; as well as, formalized administrative and instructional procedures. The project addresses each of these requirements. The GSLT will provide the physical facility in which the training center will be housed. As of December, 1979, construction was 75% complete. USAID financed technical assistance, training and commodity inputs will result in the satisfaction of the remaining requirements.

P. USAID PROJECT INPUTS:

	($000)
1. Technical Assistance (130 pm)	$1,033.6
2. Participant Training (110 pm)	501.6
3. Commodities (equipment, tools, etc.)	1,200.4
4. Overhead	553.6
5. Contractor Fee	194.3
6. Inflation	568.9
7. Contingency	405.3
TOTAL	$4,457.7

Q. EGYPTIAN CONTRIBUTION: The total Egyptian contribution of U.S. $2.4 million represents the value of the land and physical facility provided by the GSLT ($.85 million) and the estimated cost of operating the training center over the life of the project ($1.55 million). Funds to cover operating costs will be provided by the GSLT (20%) the MOM (20%) and participating bus and truck transport companies (60%).

R. RECOMMENDATION: The Project Committee recommends that the USAID/Egypt Mission Director approve the project and authorize the grant.

II. BACKGROUND AND PROBLEM IDENTIFICATION

The Egyptian population of over 41 million is concentrated in a few major corridors of the delta and along the Nile Valley. The overwhelming mode of transport for both freight and people is road transport. Virtually all basic consumer goods are transported by truck. The primacy of truck transport is graphically illustrated by comparisons of freight movements. Trucks carry approximately 85% of all cereal tonnage; 94% of all sand, gravel, clay and limestone; 93% of steel; 98% of construction materials; 91% of manufactured fertilizers; and 28% of mineral ores including phosphates. Relatively few Egyptians own and operate personal automobiles. In Cairo, for example, the ratio of private cars to population is only about 18 per 1,000. The vast majority of Egyptians from the middle, lower-middle and particularly the poorest socio-economic classes, depend almost exclusively on buses for transportation.

Reliance on road transport probably does not represent the most efficient mix of transport for a country of Egypt's geography. It is a reality, however, which resulted from a limited capability to develop rail and inland waterway systems and the relative ease with which

road transport could be expanded over the short run. Such ease of expansion allowed the Government to provide for immediate needs when they arose and when capital for expansion was available.

One of the most striking characteristics of road transport in Egypt is the degree of public sector ownership and control. The sub-sector is dominated by public sector companies which own, operate and maintain large fleets of buses and trucks. Approximately 75% of inter-city bus transport, and an even greater percentage of intra-city bus transport, is performed by public sector companies. Almost all intermediate and finished goods produced by Egyptian public sector firms are transported by publicly owned trucking companies.

Three types of public sector organizations are currently responsible for road transport in Egypt:

Public Sector Truck Companies;
Public Sector Bus Companies; and
Transportation Authorities.

The five public sector truck companies (Goods Transport, Rural Transport, Direct Transport, Transporation Works and Heavy Transport) all serve Cairo and Alexandria.

Each is assigned an exclusive operational zone and authorized a certain capacity. The four major public sector bus companies each serve a specific geographic area (East Delta, Middle Delta, West Delta and Upper Egypt). They provide both inter-city and intra-city service within their assigned operational zones.

Since 1975, overall supervisory authority over public sector bus and truck companies has resided with the Ministry of Transport. Control is exercised through budget approval and other formal procedures. The companies are considered autonomous organizations and each is expected to earn a profit. Steps have been taken to increase the accountability of the companies through increasing the authority and responsibility of operational managers. The companies are currently free to make basic decisions as to the expansion of facilities and the purchase of new vehicles equipment and spare parts.

The Government has allowed the truck companies to adjust freight rates so that, to a degree, they reflect operating costs. Bus fares, on the other hand, are set at extremely low levels as part of the overall Government subsidy program directed toward the poor. Both the public sector truck companies and the public

sector bus companies generate operating losses and Government subsidies are constant and substantial. The truck companies, however, because of their ability to negotiate rate increases, come much closer to the financial break-even point than do the bus companies.

It should be noted at this point, that all nine of the public sector bus and truck companies identified above have indicated their desire to participate in this project.

The third and final type of public sector transport organization is the transportation authority. There are two such authorities and they provide public transport services in the major Egyptian metropolitan areas of Cairo and Alexandria. They serve the urban public and are regarded as service organizations in contrast to commercial organizations. They operate buses, trains, trolleys and, in Cairo, river transport for passengers. Buses, however, dominate the transport mix. Each is a dependency of its respective governorate. Each generates large operating losses which are made up by subsidies from the Ministry of Finance. Transportation authorities do not report to the Ministry of Transport and they appear to enjoy a much greater degree of autonomy than do the public sector bus and truck companies.

One other organization, a labor union, plays an important role in the Egyptian land transport sub-sector. This organization is the General Syndicate for Land Transport (GSLT). All public and private land transport workers in Egypt are represented by the GSLT. With over 352,000 members, it is the largest single labor organization in Egypt. As with other labor organizations, the GSLT operates under the authority of the General Trade Union of Egypt. The GSLT, in addition to its concern for the welfare of its members, is very much interested in upgrading the skills of workers in the land transport sub-sector. It was the GSLT which took the initiative when it approach USAID in December, 1977 and requested assistance in developing a heavy vehicle maintenance training center in the Mataria District of Cairo.

The operation of the public sector land transport system is of key importance to the economic development of Egypt. By its nature, the system serves the entire population. It is the poor, however, who depend most on it for transport of passengers and basic commodities and are most affected by the quality of services provided.

Of major concern, because of its high visibility and

direct daily impact on the lives of millions of Egyptians, is the poor quality of bus services. The bus companies have no sophisticated scheduling systems and, thus, there is little, if any distinction between peak and non-peak operations. The great majority of buses are severely overloaded throughout their 16 hour operational day. Paid ridership, which underestimates actual ridership, on some bus routes in the urban centers exceeds 2,500 per bus per day. Single deck buses, designed to safely carry 75 to 85 passengers regularly carry over 100, and often the number of passengers exceeds 150. One result of such heavy vehicle use is heavy pressure on vehicle maintenance and repair systems.

At any given time, up to one third of inter-city buses are deadlined on the streets or in maintenance and repair garages. The situation of intra-city buses is much the same. In late 1979, of the approximately 2,900 buses owned by the transportation authority in Cairo only 1,600 were in sufficiently good operating condition to be considered "effective fleet." Of these, only an average of 78% were in daily service.

Average vehicle life for Egyptian buses seldom exceeds 5 years. By comparison, buses operated by the London

transportation authority have a minimum service life of fifteen (15) years. Data for one major Egyptian bus company showed a "technical defects in-service" rate of 1 per 350 km with an average time out-of-service of 150 minutes. A comparable figure, again for London, is 1 service failure per 64,000 km, failure being rigidly defined as an engineering breakdown which exceeds 5 minutes delay or involves any loss of scheduled mileage.

The condition of those buses that do remain in daily service is very poor. Exteriors and windows are seldom washed. Paneling and other body parts exhibit evidence of collision damage. Many windows are broken, missing or have been replaced with wood. Axle shields leak. Brake and steering systems are poorly adjusted. Electrical systems do not function properly and motors smoke excessively due to improper valve or fuel injections system adjustment. The situation has reached the point where the overcrowded and dilapidated bus has become the symbol of Egypt's transportation infrastructure problem and of the press of humanity against available resources. Pictures of such buses have probably appeared in more Egyptian press articles than any other picture of everyday life in Egypt.

There are a range of general problems, discussed elsewhere in this paper, which beset all public sector transport companies in Egypt and have a negative impact on their ability to provide high quality service to the public. Many of these problems have been identified and are being addressed by the Govern ment or the companies themselves. Regardless of how these general problems are solved there will remain the basic need for efficiently operating vehicle maintenance and repair systems capable of keeping buses and trucks in good operating condition and on the streets.

As noted, Egyptian public sector vehicle maintenance and repair systems are not effective. Vehicle life is short and the rate of breakdown excessive. If vehicle maintenance systems were efficiently operated, it could be argued that the "cause" of short vehicle life and high breakdown rates is excessive demand for services. In other words, buses break down because they are over burdened and over used. In fact, current public sector vehicle maintenance systems are not efficiently operated. Vehicles are not properly maintained and repaired. Even given current high rates of use, there is still much that could be done to increase vehicle life and reduce vehicle failures.

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With few exceptions, public sector vehicles maintenance systems are poorly planned. Because of the desire of each transport company to be self-sufficient, there is much duplication in maintenance and repair facilities. Because of a lack of vehicle standardization, badly designed distribution systems and a shortage of foreign exchange, spare parts of many types are in short supply. At the same time, and for the same reasons, stocks of some types of spare parts are excessive. The system does not stress preventive maintenance. Rather, breakdowns occur and then repairs are effected. Budgeting for maintenance is not well developed and not clearly linked to operational statistics. Unit costs, or unit performance standards, are not employed. Life cycle costs are not generally used as a vehicle replacement criterion.

Maintenance and repair facilities themselves are, for the most part, poorly designed. Shops are usually located in a long row. Walking distances between shops, pits, toolrooms and stores are great. Worker supervision under such circumstances is difficult at best. Because of improper maintenance and part disassembly procedures, thick films of fuel oil, crankcase oil, other fluids, and grease are found in most shop and pit areas. The resulting surface is unsafe for vehicle travel and in many cases for walking.

Quantities of scrap parts, worn-out tires and bus hulks occupy large amounts of space. Equipment is sometimes lacking and proper tools are not always available. Drainage at some sites is a problem. Lighting, both natural and artificial, is generally not adequate for the work involved.

A critical problem affecting the efficiency of public sector maintenance systems is the shortage of skilled vehicle maintenance mechanics. There is no shortage of workers. In fact, overstaffing is a chronic public sector problem. The shortage is in skilled workers. On site studies conducted within public sector maintenance and repair facilities have shown that many basic maintenance and repair tasks are not properly executed. In many cases, even when proper tools and equipment are available, workers do not use them or they use them improperly. As a result, vehicles breakdown more rapidly than they have to and service life is shorter than it could be. By itself, the reorganization of maintenance and repair facilities and the provision of equipment and tools will not significantly improve vehicle maintenance standards. If a maintenance or repair task is to be performed properly, it must be performed by a mechanic who is

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skilled and knows his job. In a few cases, skilled Egyptian mechanics lack proper tools and equipment. In far more cases, tools and equipment lack a skilled mechanic.

In the Planning Research Corporation, F. Harris Company Report entitled, "Technical and Feasibility Studies of Public Sector Vehicle Maintenance in Egypt" (discussed elsewhere in this paper), most maintenance facilities are vividly described as being poorly designed, disorganized, inefficiently administered, improperly staffed and very poorly maintained in themselves. The report identifies poor management as a major constraint and strongly recommends management training at all levels as a priority need.

Regardless of how other public sector vehicle maintenance problems are solved, there will remain the need for skilled maintenance mechanics capable of properly performing a wide range of heavy vehicle maintenance and repair tasks. Whether working conditions are ideal or considerably less than ideal, the well trained and skilled mechanic is an essential component in any vehicle maintenance system which pretends to be efficient.

Most Egyptian vehicle maintenance workers have learned their trades informally on the job. Their training was unsystematic and provided by unqualified co-workers under conditions not suited to learning. The results of such training have already been noted.

Though both the Ministry of Education and the Ministry of Industry offer secondary level vocational courses in auto mechanics, the graduates of these formal programs seldom find employment as vehicle maintenance workers. Presently, there does not exist in Egypt a training program designed specifically for heavy vehicle maintenance mechanics. The object of this project is to develop the first.

III. PROJECT DESCRIPTION

A. Objectives

The main objectives of this project are:

GOAL:	To improve the quality of bus and truck transport services provided to the public.
SUB-GOAL:	To increase the efficiency of vehicle maintenance systems.
PURPOSE:	To update the skills and improve the work habits of vehicle maintenance workers.

The strategy selected to achieve the project purpose calls for the establishment of a heavy vehicle maintenance training center in the Mataria District of Cairo. The center will be owned and operated by the GSLT and will serve the training needs of the nine major public sector bus and truck transport companies. These companies currently employ approximately 5,000 vehicle maintenance workers who are classified as mechanics. When fully operational the center will provide training in over 20 key vehicle maintenance occupation/trade areas to upgrade approximately 540 mechanics to the skilled level each year. Although primary focus will be on upgrading the skills of employed mechanics, apprenticeship and accelerated training will also be provided for new employees.

B. RELATIONSHIP TO GOE PRIORITIES

The government of Egypt has recognized the importance of dealing with transport problems. The Egyptian "Five Year Plan, 1978-1982," Volume Seven, "The Government Strategy for Transportation and Communication," clearly identifies the importance of land transport to the economy and within this sector identifies the lack of proper vehicle maintenance as a critical problem. In its analysis, the Plan clearly identifies the development of skilled vehicle maintenance workers as a priority input into the solution of this problem. The GOE places a high priority on meeting the skilled manpower needs of the transport sector.

C. RELATIONSHIP TO CDSS

The objectives of this project relate to the USAID/Egypt CDSS strategy on several levels. First, one of the target objectives of the CDSS is to improve the outreach and effectiveness of government services affecting the poor. The major share of both bus and truck transport services is provided by public sector companies and it is exactly the poor who most depend on these services, particularly bus services. Second, on the more specific level of infrastructure, the CDSS identifies transportation as

one of the areas, which over the medium term, the Mission proposes to concentrate a significant level of resources. It would appear to be a logical companion decision to insure these investments to the greatest degree possible by also providing assistance to Egypt to help maintain these transport systems. This project is one example of this kind of support. It can be expected to increase the efficiency of investments already made and forego problems with investments now being planned by the GOE in the land transport sector. Finally, the CDSS identifies vocational training as an important element in an overall education program for Egypt.

D. RELATED ACTIVITIES

The IBRD, in conjunction with the GOE, has undertaken a program of studies concerning the Egyptian transport sector. The most comprehensive study in the program, the "Egypt National Transport Study," was undertaken by Louis Berger International, Inc and Dorsch Consult Ingenieurgesellschaft mbH in May 1976. The overall transportation mix and its individual components, roads, railways, inland water, sea and aviation, were analyzed. Much attention was devoted to transport organization and planning. It is expected that many of the problems

identified will be addressed by the GOE or by the GOE in collaboration with the IBRD as part of the Bank's overall transport sector program. Two current IBRD projects deal with road transport: the Road Rehabilitation and Maintenance Project and the Second Urban Development Project, which has substantial transport component for Cairo.

At the level of public sector vehicle maintenance systems, USAID has funded a comprehensive study which was undertaken in mid-1979 by Planning Research Corporation, F. Harris Company. The study was concerned with six major functional aspects of public sector vehicle maintenance: (1) management; (2) financial operations; (3) equipment and facilities; (4) maintenance system procedures and operations; (5) logistic support system procedures and operations and (6) training. A final report was submitted in December 1979. The Mission has under consideration possible activities that may emerge as a result of the Harris Report. USAID also contracted a two-man

team from the Academy for Educational Development to assess the specific training needs of vehicle maintenance workers in the public transport companies. The results of the latter study served as the technical base for the development of this project.

The ILO is in the process of development of a project to assist the Middle Delta Bus Company improve its operations. The project is in the early planning stage and firm lines of action have not yet been established.

Specific actions taken by the GOE to improve the quality of public sector transport includes the use of its own foreign exchange and CIP funds to import new vehicles and the initiation of a program to expand internal capacity to produce greater numbers of buses and trucks. As noted, the GOE has also allowed public sector companies to assume more of the responsibility for their operations. The Government has attempted to force standardization and given the public sector transport companies easier access to foreign exchange to relieve parts shortages. To increase worker productivity, the GOE has encouraged public sector companies to develop special worker incentive programs. Some companies have taken

advantage of this opportunity and linked incentives to worker productivity. In companies where such incentive systems are employed, it is not uncommon for workers' take home pay to be more than double their base wage.

One area which until now has not received adequate GOE attention, despite stated priorities, is the training of skilled heavy vehicle maintenance workers. The present project, with the direct involvement of the GSLT and the public sector transport companies, has been endorsed by the GOE and will be implemented with the GOE's financial support.

E. BRIEF PROJECT HISTORY

In December of 1977, the GSLT approached USAID with a request for assistance in the development of a heavy vehicle maintenance training center. The site for the center had been dedicated by President Sadat some six months earlier. Mr. Sadat indicated his desire to return for the dedication of the completed facility. Actual construction was initiated in May, 1978.

A Project Identification Document (PID) was prepared by the Mission and approved by AID/W on May 24, 1979. At that time AID/W authorized the Mission

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to approve the Project Paper (PP). During the months of July, August and September of 1979, a project design team, consisting of Mission, AID/W and contractor elements, worked with the GSLT to develop the technical aspects of the project.

As of December, 1979, construction of the training center was 75% complete. It is estimated that all construction; with the exception of the pouring of shop floors, will be completed by July 1980. Construction costs are being financed by the GSLT. These are estimated to total L.E. 245,000, an approximate dollar equivalent of $350,000.

F. TRAINING CENTER CAPABILITIES

The project will result in the development of a GSLT capability to provide training in the following heavy vehicle maintenance occupation/trade areas:

1. Preventive Maintenance Mechanic
2. Diesel Engine Mechanic
3. Power Train Mechanic
4. Automotive Electrician
5. Front-End Alignment Mechanic
6. Fuel Injection Mechanic
7. Fluid Power Mechanic (hydraulics)
8. Brake Mechanic
9. Road Service Mechanic
10. Air Conditioning Mechanic
11. Cooling Systems Mechanic
12. Body/Fender Mechanic

13. Sheetmetal Mechanic
14. Automotive Machinist
15. Welder
16. Blacksmith
17. Partsman/Expeditor
18. Toolroom Man
19. Dynamometer Man
20. Steering System Mechanic

A brief description of the occupational duties associated with each occupation/trade is found in Annex 10(a). The range of job skills represented covers most of the bus/truck maintenance spectrum. All key job areas are represented and expansion into other areas is anticipated.

G. PROJECT OUTPUTS

In order for the GSLT training center to provide the kinds of training which will result in the development of the desired skills and work habits, certain "training inputs" are required. These include a physical facility with adequate space for shops, classrooms, storage and administration; an appropriate curriculum; equipment, tools, training aids and instructional materials; qualified instructors and administrators; as well as, formalized administrative and instructional procedures. These "training inputs" are in effect the outputs to be produced by the project.

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Specific Outputs Are:

Trained Administrators	-	3 individuals
Trained Instructors	-	44 individuals(22trained in th U.S. and 22 OJT)
Curriculum Established	-	24 courses, 20 programs
Shops Equipped	-	8 shops
Classrooms Equipped	-	9 classrooms
Adm.Procedures Established	-	1 plan
Instructional Procedures Established	-	1 plan

H. PROJECT INPUTS AND COSTS

The project inputs deemed sufficient to produce the outputs outlined in the previous section are as follows:

USAID

(a) Technical Assistance $1,112,600

The project will provide 5 person years of long-term technical expertise, and 5.8 person years of short-term technical advisor services. Project evaluation contract services of 19 person weeks will also be provided. The staffing pattern is as follows:

	Person Months
Administration Specialist*	36
Technical Specialist	24
Curriculum Design Team	15
Equipment/Shop Layout Specialist	5
Trainer/Instructor Advisors	50

*Chief of Party

Job descriptions for all technical advisors are found in Annex 10 (h).

(b) Participant Training $581,700

All training programs provided by the project will be short-term and conducted in U.S. factory schools, vocational/technical schools and in bus/truck maintenance facilities. A total of 9.2 person years of training will be provided for three GSLT administrators and 22 GSLT instructors. Prior to departure for the U.S., the 25 participants will each receive 16 weeks of English language instruction.

The distribution as follows:

Administrators	20 person months
Instructors	90 person months

Training program descriptions are found in Annex 9 (g). The project's training schedule has been designed for completion at the end of the first of the year.

(c) Commodities $1,200,400

The project will provide the equipment, tools, training aids and supplies required to implement the GSLT training curriculum.

Specific shops to be equipped are:

Preventive Maintenance
Diesel Engine and Fuel Injection
Front-End, Brakes/Steering
Electrical
Machine

Blacksmith, Welding & Cooling Systems
Transmission, Hydraulics & Air Conditioning
Body, Fender and Sheetmetal

Detailed commodities lists are found in Annex 10(i)

(d) Contractor Overhead		$ 553,600
(e) Contractor Fee		$ 194,300
(f) Inflation		$ 568,900
(g) Contingency		$ 246,300
	TOTAL USAID	$4,457,800
GOE/GSLT		
(a) Land		$ 500,000
(b) Physical Facilities		350,000
(c) Personnel Costs		900,000
(d) Other Operating Costs		225,000
(e) Inflation		225,700
(f) Contingency		$ 225,800
	TOTAL GOE/GSLT	$2,426,500

I. PROJECT STRATEGY

The project is designed to insure that the outputs produced are of the kinds and magnitude required to achieve the project purpose, and that they are organized in such a manner that training provided by the GSLT is both efficient and effective. Relationships between inputs are represented in the USAID

inputs schedule found on the following page. Relationships between inputs and outputs are discussed below

Curriculum

The development of an appropriate curriculum is an essential element in the project. Basic course outlines and training programs were developed by the project design team and are found in Annex 9 (b) & (c). These require further detailing and refinement by the Contractor.

The project allocates 15 person months of short-term technical assistance to the specific task of curriculum development. This assistance will be provided by a three person Curriculum Design Team during the first five months of project activity. To insure that all equipment, tools and training aids, provided by the project are the type required to implement the curriculum, the activities of this team will be closely coordinated with the activities of the Equipment/Shop Layout Specialist, whose services are also provided by the project. Further refinements in the curriculum will be made throughout the project by additional long and short-term consultants as well as by the 22 GSLT instructors after they have completed their U.S. participant training programs.

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USAID PROJECT INPUT SCHEDULE

USAID INPUTS	PROJECT SCHEDULE					
	YEAR 1, MONTHS		YEAR 2, MONTHS		YEAR 3, MONTHS	
	1 2 3 4 5 6	7 8 9 0 1 2	1 2 3 4 5 6	7 8 9 0 1 2	1 2 3 4 5 6	7 8 9 0 1 2
TECHNICAL ASSISTANCE:						
Equipment/Shop Layout (1 person)	x x	x	x x			
Curriculum Development (3 persons)	x x x x x					
Trainer Instructors (7 persons)			x x x x x x	x x x x x x	x x x x x x	x x x x x x
Administrator/Technical (1 person)	x x x x x x	x x x x x x	x x x x x x	x x x x x x	x x x x x x	x x x x x x
Technical (1 person)			x x x x x x	x x x x x x	x x x x x x	x x x x x x
TRAINING (U.S.):						
Instructors (22 trainees)		x x x x				
Administrators (3 trainees)	x x x					
COMMODITIES:						
(a) Acquisition	x x x x	x x x x x				
(b) Installation		x	x x			
(c) Operation			x x x x	x x x x x x	x x x x x x	x x x x x x

SUMMARY: Technical Assistance
a. Long Term (2 persons) 60 person months
b. Short Term (13 persons), 70 person months

Training
25 participant trainees; all short term; 110 person months

Commodities
Total estimated cost in U.S.: (1979 prices) $914,568

Physical Facility

The GSLT will provide the physical facility in which the training center will be housed. Modifications suggested by the project design team were accepted by the GSLT and incorporated in construction plans. Drawings of the training complex are found in Annex 10(d)

Shops and classrooms are adequate to serve their intended purposes and are relatively well located. All instructional rooms are of sufficient size to accommodate at least 20 trainees.

Finishing details such as the location of drains, air hoses, equipment pads, lights and electrical outlets will depend on the final location of equipment within the shops The Equipment/Shop Layout Specialist will provide technical input in this area.

Commodities

Basic lists of commodities (equipment, tools, training aids, etc.) to be procured under the project are found in Annex 10(i) . These lists need to be refined and specified in detail by the Contractor. For this purpose, the project provides the technical services of an Equipment/Shop Layout Specialist for a period of two months at the beginning of the project. As stated,

his activities will be closely coordinated with the activities of the three person Curriculum Design Team. This consultant will also be responsible for the development of detailed shop layout plans. When equipment and other commodities arrive at the center near the end of the first year of the project, the Equipment/Shop Layout Specialist will return for a second consultancy of three months to supervise its installation.

Instructors

It is estimated that the GSLT training center, when in full operation, will require the full time services of 44 qualified instructors.The GSLT will provide these instructors. The project provides approximately 90 person months of training in the U.S. for 22 instructor specialists to upgrade their capabilities in the required areas. The other 22 instructors will receive OJT from those trained in the U.S. and contract specialists. Training program descriptions are found in Annex 9 (g).

To develop the required mix of instructor skills, 10 training programs are required. At least two instructors will participate in each. All programs call for a 90 hour teaching techniques course and a 20 hour visual aids course. the total duration of the individual programs ranges from 230 to 410 course hours.

During the second and third years of the project,

instructor qualification will be further upgraded through on-the-job training provided by both long and short-term advisors. The project provides for the long-term services of a Vocational/Technical Training Specialist, as well as, for the short-term technical services of 9 Instructor/Trainers. The Training Specialist will have a two year assignment while the consultancies of the Instructor/Trainers will range from four months to nine months. Job descriptions for these advisors are found in Annex 10 (h) A major task of the long-term Vocation/Technical Specialist will be the development of a comprehensive set of instructional procedures to guide the technical operations of the training center.

Administrators

To develop GSLT administrative capabilities and establish efficient administrative procedures, the project provides both technical assistance and participant training. Technical assistance will be provided by vocational /Technical School Administration Specialist, whose long-term assignment will cover the entire three year life of the project. This consultant will work directly with the Training Center Director and will serve as the Contractor's Chief of Party. A job description is found in Annex 10 (h).

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In addition, the project provides a total of 20 person months of short-term U.S. training for three GSLT administrators. As with short-term training for GSLT instructors, administrative training programs will be conducted in vocational/technical schools and in heavy vehicle maintenance facilities. Training program descriptions are found in Annex 10(g). It is estimated that as a result of project technical assistance and training activities the skills of at least eight GSLT administrators will be upgraded.

J. BENEFICIARIES

The ultimate beneficiaries of this project are the millions of Egyptian men, women and children from the poorer socio-economic classes who will benefit from improvements in the quality of services provided by public sector bus and truck companies.

Direct project beneficiaries may be divided into two groups. First - GSLT administrators and instructors who will have their qualifications upgraded as a direct result of project training and technical assistance inputs. The project will benefit at least 44 instructors and three administrators directly.

Others will be benefitted by informal contacts with U.S. consultants throughout the project. Second - public sector vehicle maintenance mechanics whose skills will be upgraded as a result of training provided by the GSLT. It is estimated that 200 workers will be trained during the second year of the project, and that at least 540 more will be trained during the third year, when the center becomes fully operational. In subsequent years, it is anticipated that the GSLT will continue to operate at full capacity and produce at least an additional 540 skilled vehicle maintenance mechanics per year. Over 10 years of full scale operation, almost 5,500 workers will receive skills training and, thus benefit from the project.

K. PROJECT COSTS AND FINANCING

The total cost of the three year project is estimated at $6.9 million. The USAID financial contribution is set at $4.5 million, or 64.8% of total cost. The remaining $2.4 million, or 35.2% will be financed by Egyptian organizations: the GSLT - $1.2 million (16.9%); the Ministry of Manpower and Vocational Training (MOM) $.3 million (4.6%); and participating bus and truck transport companies - $.9 million (13.7%).

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Detailed cost estimates for all USAID financed inputs are found in Annex 8. Project costs and financial plans are summarized in the three tables which follow:

Summary Cost Estimates and Financial Plan, page 20;

Estimated Expenditures by Fiscal Year, page 21; and

Costing of Project Inputs/Outputs, page 22

Source and Use of Funds

As noted, the project will be jointly funded by USAID, the GSLT, the MOM and participating bus and truck transport companies. The total USAID financial contribution of $4.5 million will be obligated in FY 1980, subject to the availability of funds. USAID funds will be utilized for all project foreign exchange requirements, which are estimated at $3.9 million, or 56.6% of total project cost. Foreign exchange costs are related to the procurement of technical assistance, participant training services and commodities. The remainder of the USAID financial input, $.6 million, will cover local currency costs associated with the provision of technical assistance.

The total value of the land and physical facility provided by the GSLT is estimated at $.85 million.

SUMMARY OF COST ESTIMATES AND FINANCIAL PLAN

(All Figures in $000)

PROJECT: VEHICLE MAINTENANCE TRAINING

Number: 263-0114

	USAID			GOE			TOTAL		
	FX($)	LC(LE)	TOTAL	FX ($)	LC (LE)	TOTAL	FX ($)	LC (LE)	TOTAL
1. Technical Assistance	732.2	380.4	1,112.6	-	-	-	732.2	380.4	1,112.6
2. Participant Training	581.7	-	581.7	-	-	-	581.7	-	581.7
3. Commodities	1,200.4	-	1,200.4	-	-	-	1,200.4	-	1,200.4
4. Personnel	-	-	-	-	900.0	900.0	-	900.0	900.0
5. Other Operating Costs	-	-	-	-	225.0	225.0	-	225.0	225.0
6. Land	-	-	-	-	500.0	500.0	-	500.0	500.0
7. Physical Facilities	-	-	-	-	350.0	350.0	-	350.0	350.0
SUB-TOTAL	2,514.3	380.4	2,894.7	-	1,975.0	1,975.0	2,514.3	2,355.4	4,869.7
8. Overhead	553.6	-	553.6	-	-	-	553.6	-	553.6
9. Contract Fees	194.3	-	194.3	-	-	-	194.3	-	194.3
10. Inflation	423.4	145.5	568.9	-	225.7	225.7	423.4	371.2	794.6
11. Contingency	209.1	37.2	246.3	-	225.8	225.8	209.1	263.0	472.1
TOTAL	3,894.7	563.1	4,457.8	-	2,426.5	2,426.5	3,894.7	2,989.6	6,884.3

ESTIMATED EXPENDITURES BY FISCAL YEAR

(All Figures in Dollars)

PROJECT: VEHICLE MAINTENANCE TRAINING

Number: 263-0014

	YEAR 1			YEAR 2			YEAR 3			TOTAL FOR PROJECT		
	FX ($)	LC (LE)	TOTAL	FX ($)	LC (LE)	TOTAL	FX ($)	LC (LE)	TOTAL	FX ($)	LC (LE)	TOTAL
AID INPUTS												
Technical Assistance	163,100	84,840	247,940	260,050	136,440	396,490	309,050	159,120	468,170	732,200	380,400	1,112,600
Participant Training	581,750	-	581,750	-	-	-	-	-	-	581,750	-	581,750
Commodities	1,200,370	-	1,200,370	-	-	-	-	-	-	1,200,370	-	1,200,370
SUB-TOTAL	1,945,220	84,840	2,030,060	260,050	136,440	396,490	309,050	159,120	468,170	2,514,320	380,400	2,894,720
Overhead	111,650	-	111,650	197,235	-	197,235	244,755	-	244,755	553,640	-	553,640
Contractor Fee	74,171	-	74,171	53,296	-	53,296	66,872	-	66,872	194,339	-	194,339
Inflation(1)	293,827	16,408	310,239	47,610	50,144	97,754	81,965	78,942	160,907	423,402	145,494	568,896
Contingency	140,187	7,045	147,232	32,239	13,731	46,670	35,944	16,414	52,358	209,070	37,190	246,260
TOTAL - AID	2,565,055	108,293	2,673,348	591,130	200,315	791,445	738,586	254,476	993,062	3,894,771	563,084	4,457,855
GOE INPUTS												
Personnel	-	200,000	200,000	-	300,000	300,000	-	400,000	400,000	-	900,000	900,000
Land	-	500,000	500,000	-	-	-	-	-	-	-	500,000	500,000
Physical Facilities	-	350,000	350,000	-	-	-	-	-	-	-	350,000	350,000
Other Oper. Costs	-	50,000	50,000	-	75,000	75,000	-	100,000	100,000	-	225,000	225,000
SUB-TOTAL	-	1,100,000	1,100,000	-	375,000	375,000	-	500,000	500,000	-	1,975,000	1,975,000
Inflation/ Contingency	-	50,000	50,000	-	142,500	142,500	-	259,000	259,000	-	451,000	451,000
TOTAL - GOE	-	1,150,000	1,150,000	-	517,500	517,500	-	759,000	759,000	-	2,426,500	2,426,500
TOTAL FOR PROJECT	2,565,055	1,258,293	3,823,348	591,130	717,815	1,308,945	738,586	1,013,476	1,752,062	3,894,771	2,989,584	6,884,355

COSTING OF PROJECT INPUTS/OUTPUTS

(All Figures in $ 000)

PROJECT: VEHICLE MAINTENANCE TRAINING

NUMBER 263-0114

OUTPUTS	ADMINISTRATION ADMINISTRATORS & ADMINISTRATIVE PROCEDURES			II. INSTRUCTION INSTRUCTORS, CURRICULUM & INSTRUCTIONAL PROCEDURES			III. TRAINING FACILITY BUILDING, SHOPS & CLASSROOMS			TOTAL ALL OUTPUTS		
INPUTS	FX ($)	LC (LE)	TOTAL	FX ($)	LC (LE)	TOTAL	FX ($)	LC (LE)	TOTAL	FX ($)	LC (LE)	TOTAL
Technical Assistance	273.4	111.2	384.6	436.4	254.9	691.3	22.4	14.3	36.7	732.2	380.4	1,112.6
Participant Training	99.9	-	99.9	481.8	-	481.8	-	-	-	581.7	-	581.7
Commodities	-	-	-	-		-	1,200.4	-	1,200.4	1,200.4	-	1,200.4
SUB-TOTAL	373.3	111.2	484.5	918.2	254.9	1,173.1	1,222.8	14.3	1,237.1	2,514.3	380.4	2,894.7
Overhead	151.0	-	151.0	382.2	-	382.2	20.4	-	20.4	553.6	-	553.6
Contractor Fee	50.7	-	50.7	138.9	-	138.9	4.7	-	4.7	194.3	-	194.3
Inflation	50.4	35.6	86.0	140.8	105.3	246.1	232.2	4.6	236.8	423.4	145.5	568.9
Contingency	45.5	13.3	58.8	80.6	36.0	116.6	69.0	1.9	70.9	195.1	51.2	246.3
TOTAL	670.9	160.1	831.0	1,660.7	396.2	2,056.9	1,549.1	20.8	1,569.9	3,880.7	577.1	4,457.8
GOE INPUTS												
Personnel	-	405.0	405.0	-	405.0	405.0	-	90.0	90.0	-	900.0	900.0
Other Oper. Costs	-	101.2	101.2	-	101.3	101.3	-	22.5	22.5	-	225.0	225.0
Land	-	-	-	-	-	-	-	500.0	500.0	-	500.0	500.0
Physical Facilities	-	-	-		-	-	-	350.0	350.0	-	350.0	350.0
SUB-TOTAL	-	506.2	506.2	-	506.3	506.3	-	962.5	962.5	-	1,975.0	1,975.0
Inflation/ Contingency	-	203.1	203.1	-	202.2	202.2	-	46.2	46.2	-	451.5	451.5
TOTAL	-	709.3	709.3	-	708.5	708.5	-	1,008.7	1,008.7	-	2,426.5	2,426.5
TOTAL FOR PROJECT	670.9	869.4	1,540.3	1,660.7	1,104.7	2,765.4	1,549.1	1,029.5	2,578.6	3,894.7	3,003.6	6,884.3

This represents 35% of the total Egyptian financial input, and 12.3% of total project cost. The remainder of the Egyptian financial input, $1.6 million will cover the operating costs of the training center over the life of the project.

Estimates of operating costs were developed by the GSLT and include a significant allowance, 28.6% of the total, for inflation and contingency. In developing its estimate the GSLT judged that, when fully operational, the training center would require a full time staff of 126 individuals. This figure represents current GSLT thinking and reflects present Egyptian management styles. Considerable technical assistance during the first year of the project is allocated to the development of an efficient administrative and organizational structure for the GSLT training center. It is anticipated that, as a result of this technical assistance input, actual operating costs will be lower than estimated by the GSLT. However, since the actual degree to which operating costs will be lower cannot be determined at this time, the GSLT estimates are used and accepted as the best available.

Funds to cover operating costs will be derived from

three sources; the GSLT (20%), the MOM (20%), and participating transport companies (60%). Companies which have indicated their desire to have their workers skills upgraded at the center and participate in the financing of operational costs are: the Upper Egypt, East Delta, Middle Delta, West Delta bus companies; the Goods, Direct, Land, Heavy and Work transport companies; and the Automotive Repair Company. The Automotive Repair Company is a private sector organization operating in the Cairo area. As noted, the others are public sector entities.

Expenditures by Fiscal Year

All commodity procurement and participant training will take place during the first year of the project. Technical assistance on the other hand is concentrated in project years two and three. As a result, $2.7 million or 60% of USAID funds, will be expended during project year one, while only $.8 million (18%) and $1.0 million (22%) will be expended in project years two and three respectively.

GSLT expenditures for land and physical facilities, $.85 million, are allocated to project year one. As of November, 1979, approximately 90% of these costs

had already been paid. The remaining 10% will be paid early in project year one Operating costs, the remaining 65% of the Egyptian financial input, are allocated to the project years based on the assumption that the training center will reach 50% of full capacity during the first year, 70% during the second, and full capacity during the third and final year.

Costing of Outputs

The project outputs identified in section III. G. may be grouped in three major categories:

ADMINISTRATION	The development of administrative skills and administrative procedures.
INSTRUCTION	The development of instructor skills, curriculum, instructional materials and procedures.
TRAINING FACILITIES	The construction of the physical facility and the equipping of its shops and classrooms.

Almost 46% of the USAID financial input is directed toward the Instruction output category, while 37% is directed toward Training Facilities and only 17% toward Administration. The largest share of the Egyptian financial input, 42%, is directed the Training Facilities output category with the remainder

equally divided between the remaining two categories Overall, 21% of financial inputs are directed toward Administration, 40% toward Instruction and 39% toward Training Facilities.

L. IMPORTANT ASSUMPTIONS

The purpose of this project is to upgrade the skills and improve the work habits of vehicle maintenance workers employed by public and private sector bus and truck transport companies. The achievement of this purpose can be expected to contribute to the improvement of vehicle maintenance standards and, ultimately, to promote increases in both the quantity and quality of transport services provided to the public.

The well trained mechanic is an essential component of any quality vehicle maintenance program. The scope of this project is limited to the development of this one essential component. The degree to which improvements in vehicle maintenance standards, and ultimately the degree to which the quality of transport service provided will be increased, depends on a large number of other factors. Though these factors cannot be controlled within the limited scope of this project, their importance to the

achievement of the higher level objectives of the project is recognized.

Important assumptions related to the achievement of project objectives at all levels are indicated in the Project Logical Framework Matrix, Annex 3. Among the factors over which the project has little or no control are the following:

At the Level of the Project Goal

Current GOE policy requires that the public sector companies:

- participate in government efforts to promote full employment
- provide transportation services to the poor, primarily through low fixed fares;
- follow set Government procedures for obtaining equipment, materials and spare parts; and in most cases,
- to earn a profit

GOE policy constraints and directives are contradictory. If the quality of services provided by the public sector transport companies is to improve it must be assumed that -.

GOE transport policy will be rationalized.

Further, it must be assumed that -

Financial support for public sector transport companies will improve over the next 3 to 5 years through increased fare rates supplemented by GOE subsidies.

Currently, public sector transport companies are not well organized from a management perspective. Span of control is excessive at higher levels; there are to many levels of management at lower levels; objectives and responsibilities are not clearly defined; there is almost no delegation of authority and there is a severe lack of planning at the operational levels. There are also problems associated with personnel. Trained managers, particularly at the middle management level, are in short supply.

If the project Goal is to be achieved it must be assumed that

Overall management of the public sector transport companies will be improved.

At the Level of Project Sub-Goal

If the achievement of the project purpose is to result in improved vehicle maintenance standard it must be assumed that -

Vehicle maintenance facilities will be improved; better planned, managed and organized; cleaned; and, where lacking, tools, equipment and parts provided.

Further, it must be assumed that

> company worker productivity incentives will be sufficient to retain trained workers at their jobs.

At the Level of Project Purpose

If GSLT training center capabilities are to be maintained in the long-run it must be assumed that

> Instructor salaries and incentives are sufficient to retain trained instructors on the job.

To insure that instructors trained by the project do remain with the training center the GSLT will (1) require instructors to sign a five year contract with the GSLT prior to the initiation of their training programs and (2) will offer a base salary of L.E. 80 per month with incentives totaling an additional L.E. 80. Total instructor salary will thus be L.E. 160 per month which exceeds current private sector salaries for persons with similar qualifications.

A further assumption is that

> The training center will continue to enjoy adequate company financial support to cover the centers yearly operating costs.

As the center is being developed with substantial company support, it is likely that the training provided will meet company needs.

M. Role of Women:

The possible participation of women in this project was discussed in the Project Identification Document (PID). Every effort was made to incorporate training of women as an integral part of this program, however, it was proven to be unfeasible for the following reasons: (1) the traditional role of men as mechanics in the heavy equipment maintenance sector; (2) the fact that the primary focus of this project is on upgrading existing employees, and no women are employed as mechanics; (3) the reluctance of the GSLT to mix men and women in classes, which would be contrary to social tradition; and (4) other cultural constraints.

IV. PROJECT IMPLEMENTATION

A.

The operational goal toward which this project is directed is the establishment of a GSLT heavy vehicle maintenance training center. At the close of the project the center will be a going concern, funded, staffed and operated by Egyptians. It will offer quality training in a wide range of key vehicle maintenance areas and produce over 500 skilled vehicle maintenance mechanics each year.

In Part III - PROJECT DESCRIPTION, the kinds, quantities and time sequence of project inputs (technical assistance, participant training, commodities, etc.) deemed necessary to achieve this operational goal were identified. The costs of obtaining these inputs were estimated and sources of project funding identified. The present section, Part IV, details how the project which was described is to be implemented.

B. ORGANIZATIONS INVOLVED

There are five key organizations which will be involved in the implementation of the project:

1. The Government of the United States of American, represented by the United States Agency for International Development, USAID ;

2 The Government of the Arab Republic of Egypt, represented by the Miniatry of Manpower and Vocational Training, (MOM);

3. The General Syndicate for Land Transport, GSLT;

4. A. U.S. Contractor which will work under a host country contract with the GSLT and provide the technical assistance, participant training and commodity inputs required to implement the project; and

5. The participating Egyptian bus and truck transport Companies.

C. IMPLEMENTATION PLAN

The Project Agreement will be signed by USAID, the MOM and the GSLT. The MOM will coordinate overall project activity; however, full responsibility and authority for project implementation will rest with the GSLT. At the time the Project Agreement is signed, the MOM and GSLT will sign a Sub-Agreement by which: (a) all funds made available by USAID under the Project Agreement are made available as a grant to the GSLT for the purpose of implementing the project, and (b) the GSLT is given full responsibility and authority for the project implementation.

To implement and administer the project, the GSLT will establish a training center.

Board of Directors Representatives of the GSLT, the MOM, the Ministry of Transportation (MOT) representing the participating companies, and the training center staff will serve as Board Members.

The Board will sign a Training Agreement with each of the bus and truck transport companies that participates in the project The Training Agreement will specify the number of trainee slots allocated to each company and the amount of each company's financial contribution toward covering the operating costs of the training center.

The signing of the MOM/GSLT Sub-Agreement, the establishment of the Board of Directors and the signing of the Training Agreements will be Conditions Precedent (CPs) to the initial disbursement of USAID project funds. When these CPs are met the Board will have both the authority and the financial means to discharge its project implementation responsibilities.

One of the first responsibilities of the Board will be to obtain the services of a U.S. Contractor to provide the technical assistance, participant training

and commodity inputs required to implement the project. The Board will (1) develop and publish a prequalification notice, evaluate submissions and compile a short list of qualifying firms; (2) develop and issue a Request for Proposals (RFPs) to firms on the short list; and (3) evaluate the proposals received in response to the RFP; (4) 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.

Of special importance in the development of both the RFP and the selection criteria to be employed in evaluating proposals are the Contractor Scope of Work and the Contractor's Project Implementation Plan. The Board will insure that the Scope of Work, the key element in the RFP, is as described in Part III, PROJECT DESCRIPTION and appropriate annexes. Further, the Board will insure that the RFP requires that each proposal submitted contains a detailed Project Implementation Plan which covers all project components (technical assistance, participant training, commodity procurement, etc) and that each plan: (1) identifies specific implementation targets or objectives; (2) identifies actions required to achieve those targets or objectives; and (3) fixes responsibility for initiating and completing each required action. The required

Implementation Plan will be an expansion of the USAID Project Input Schedule found in Section III and will be summarized in both a GANT chart and a BAR diagram. Contractor selection criteria will give appropriate weight to the Implementation Plan included in each proposal

The U.S. Contractor will be represented in Egypt by its Chief of Party, the long-term Vocational/Technical Administration Specialist. The Chief of Party will have full authority to act on behalf of the Contractor and will be responsible for the discharge of all Contractor responsibilities.

The USAID/Egypt Assistant Director for Human, Social and Techno/logical Development, or his designee, will have USAID project management responsibility. Day-to-day project monitoring will be by the appointed USAID Project Officer.

All aspects of project implementation, including the flow of USAID project funds, will be in accordance with established USAID procedures. These procedures will be detailed in the Project Agreement and in the Project Implementation Letters (PILs). Where necessary and appropriate, the USAID Project Officer will provide the guidance and assistance necessary to accomplish specific implementation tasks.

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D. IMPLEMENTATION SCHEDULE

ACTION	RESPONSIBILITY	PROJECT MONTH	COMPLETION DATE
Phase I - Preparation			
Prequalification notice prepared and published	USAID/MOM/GSLT	-11	2/1980
PP Approved	USAID	-11	2/1980
Grant Agreement & MOM/GSLT Sub-Agreement Signed	USAID/MOM/GLST	-10	3/1980
Interim Consultant Board Established	GSLT	-11	2/1980
Training Agreement Signed	GSLT/Companies	-9	4/1980
All Conditions Precedent Met		-9	4/1980
Phase II - Contracting			
Prequalification Information Received and reviewed	GSLT	-9	4/1980
RFP Developed & Published	GSLT	-9	4/1980
Proposals Received	Potential Contractor	-7	6/1980
Proposal Evaluated	GSLT	-6	7/1980
Contract Negotiated & Signed	GSLT/Contractor	-4	9/1980
Phase III - Implementation			
Permanent Board of Directors Established		-4	9/1980
Contractor's Chief of Party,			
Equipment/Shop Layout			
Specialist & Curriculum			
Design Team Arrive in Egypt	Contractor	0	1/1981
Project Completion		36	

E. PROJECT MONITORING AND EVALUATION

The project Logical Framework, attached as Annex 1, and the project Financial Plan, Part III, Section K, provide the basic criteria for both project monitoring and evaluation. Four levels of monitoring and evaluation are anticipated;

1. Financial Monitoring
2. Input/Output Monitoring
3. On-Going Evaluation
4. Ex-Post Evaluation

Financial Monitoring

Purpose: To insure that financial inputs, both USAID and GOE, are adequate and being provided on a timely basis so that project input targets may be achieved. Both the GSLT and the Contractor will prepare and submit to USAID brief monthly statements of the status of project implementation with respect to the achievement of project input targets. More detailed reports will be submitted at three month intervals. The GSLT, with the assistance of the Contractor, will develop a regular system of accountability and audit for the financial accounts established under the project. The audit function will be the responsibility of the GSLT. The MOM will provide audit assistance as appropriate. In keeping with standard USAID procedure, USAID reserves the right to audit USAID financed goods and services.

Input/Output Monitoring

Purpose: To insure that project inputs, particularly technical assistance, are directed toward the production of planned project outputs. The GSLT, with the assistance of the Contractor, will develop a detailed work plan for each consultant at least 30 days prior to the consultant's planned arrival in Egypt. Each plan will specify the quantitative and qualitative objectives of the consultancy and identify specific GSLT training center counterparts. At the end of each month, each consultant will submit a report on the status of his work with respect to the objectives of his consultancy. Each consultant will also submit a final report which reviews accomplishments, identifies problems encountered and contains recommendations for future actions. Further, the GSLT will submit consultant evaluation reports at the mid-point and end of each consultancy.

The Contractor's participant training plans will be submitted for USAID review at least 30 days prior to trainee departure. Trainee progress reports will be submitted at one month intervals. In addition, USAID will interview all participant trainees upon their return to Cairo. The Contractor will also submit commodity lists for USAID review prior to the initiation of procurement.

EVALUATION PLAN

This is a three year project whose goal is to improve the quality of bus and transport services provided the public. Successful implementation of the project is expected to benefit the general public, particularly the blue collar workers and low income group, dependent upon bus transportation and relying on trucks for the delivery of producer and consumer goods.

A principal weakness in Egypt's transportation system is the failure of transportation companies to provide adequate maintenance and repair of vehicles. This project, whose purpose is to upgrade the skills and work habits of vehicle maintenance workers, seeks to overcome this weakness.

In doing so, it is proposed that a vehicle maintenance training program be established. The program, implemented in cooperation with the Egyptian General Syndicate for Land Transport (GSLT) and the COE Ministry of Manpower and Vocational Training will, when fully operational, provide training in over 20 vehicle maintenance occupation/trade areas for 540 mechanics each year.

In evaluating this project the Mission has two basic evaluation objectives. First, the Mission seeks to determine that measures taken to establish a viable vehicular maintenance training center are timely and well conceived and that the approved project design continues to be the best means of attaining the project's objectives. The two regular evaluations scheduled during the life the project will address their primary efforts toward these concerns. The regular evaluations will determine if the project's implementation is on schedule; if inputs (contract and Egyptian personnel

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equipment and tools, training materials, and GOE contribution of training site, utilities and operating costs) are appropriate to project needs; that delivery of commodities is on a timely basis, and they are appropriately installed and utilized; that proper records and accounting measures in place. The regular evaluations will also check whether the project design and underlying assumptions remain valid and provide the best means of attaining the project's objectives.

The two regular evaluations are scheduled to be undertaken in the twelfth and twenty-fourth month of the project's life. The regular evaluations will be "in-house" undertakings with Mission, contract and GOE personnel participating in the procedures. The Project Officer is responsible for preparing the regular evaluations and in doing so will utilize the Project Evaluation Summary (PES) format.

In addition, two special evaluations will be undertaken during the life of the project. They will be conducted at the mid-life of the project----at the end of 18 months------and at the time of project completion. The primary purpose of these special evaluations is to determine the extent that the project has improved the quality of bus and truck transport services provided to the public; and, to judge the extent that the Egyptian people have benefitted from the improved transport services. Measures of project impact will include: reduction in the rate of absentees at the vehicle maintenance centers; lower rate of personnel turn-over; reduced rate of vehicles being inoperative due to mechanical problems; and evidence of adherence to a vehicle maintenance plan with corresponding reduction in operation costs. For the beneficiaries, the special

evaluation study should note the project's impact effect by considering: the extent that buses and trucks adhere to their schedules of operation; increased utilization of the transport system by consumers; reduction in the incident of road accidents due to mechanical defects in vehicles; increased amount of freight hauled, additional areas serviced by the transport system.

To carry out the special evaluations the Mission will contract for the services of a firm with vehicle maintenance training know-how and overseas experience. Initially a two person team from the firm will come to Egypt for a period of two weeks. At that time they will develop a format for the collection of baseline data to be used in measuring project progress, judging the impact of the project in improving the transport system and improving the well being to the general public. During this initial visit the two man team will identify sources of baseline data and designate appropriate officials who are to be responsible for the collection and maintenance of the baseline data.

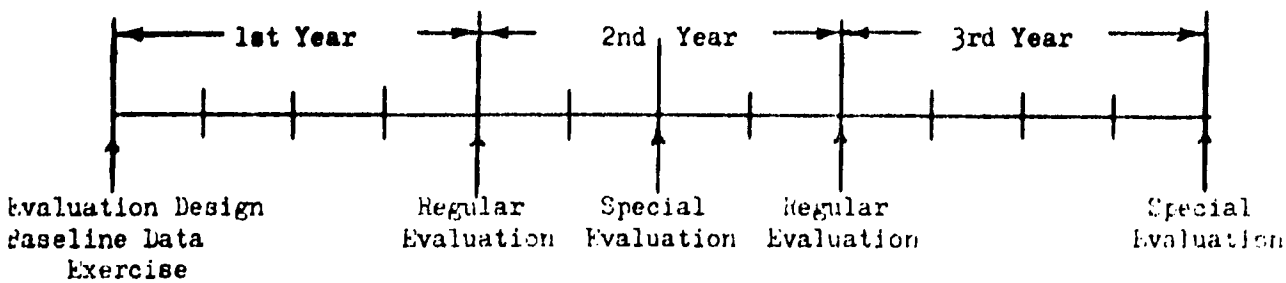
At mid-life of the project (18 months) a two person team from the firm is to come to Egypt to undertake a mid-term "in-depth" evaluation of the project over a period of three weeks. During this time the team will center their attention upon determining to what extent the project's activity has succeeded in upgrading the performance of the vehicle maintenance training center and in improving the mechanical skills and work habits of vehicle mechanics. In preparing their "in-depth" impact evaluation the team is

expected to spend extensive time at the training sites interviewing contract and Egyptian instructors, Mission and GOE project related officers, and Egyptian mechanics undergoing training. Supplementing this information the special evaluation team is to extract data from project records, the earlier regular evaluation report, and the baseline data.

At the end of the project (36 months) the second special evaluation of the project will be made. This evaluation will direct its efforts primarily upon determining what has been the impact of the project in improving the operations of Egypt's public transport system and the extent that the Egyptian general public benefits because of better bus/truck service. A three person team is programmed to carry out this study. They are expected to be in-country two weeks, followed by a third week in the U.S. to complete drafting their report.

As estimated nineteen person weeks of work has been budgeted to undertake the special evaluations and establish procedures for the collection of baseline data. Applying standard IQC rates it is estimated that the total dollar costs of the special evaluations will be $65,000. Cost for international and local travel, per diem in-country and other local expenditures is estimated at $14,000. These amounts are budgeted for under AID provided Technical Assistance.

Display of the evaluation time plan is shown below.



Responsibilities

Contractor Reports - Chief of Party

GSLT Reports - President of the Board of Directors

USAID Receipt of Reports - The Project Officer

F. CONDITIONS, COVENANTS AND NEGOTIATING STATUS

1. CONDITIONS PRECEDENT

The Condition Precedent contained in Section 4.1(b) of the standard Project Grant Agreement, relating to representatives and specimen signatures, will be included in the Project Grant Agreement.

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

(a) Evidence that the GSLT has been given full responsibility and authority for implementation of the project.

(b) Evidence of the establishment of a Board of Directors which will direct project implementation and administer the training center and evidence that representatives of the MOM, GSLT, Ministry of Transportation and the training center will serve on the Board.

2. **COVENANTS**

In addition to the standard covenants provided in Handbook 3 which will be included in the Grant Agreement, the following special covenants will be included in the Grant Agreement:

The Grantee shall:

(a) Provide a detailed instructor salary scale and incentive plan for the training center staff, showing a base salary of L.E. 80, and minimum total incentives of L.E. 80.

(b) Agree to train on-the-job a minimum of twenty-two instructors in addition to the twenty-two who will receive training in the United States.

(c) Execute agreements with participating companies that they will pay employees their base salaries while they attend the GSLT training center.

(d) Provide copies of all training agreements signed between the Board and bus and truck companies who participate in the project. The training agreements will specify the number of trainee spaces allocated to each company and the amount of each company's financial contribution toward operating costs of the training center.

(e) Endeavor to the extent practicable to include women as full participants in the project and report to A.I.D. at least annually on progress made in this regard.

V. PROJECT FEASIBILITY

A. TECHNICAL

The purpose of this project is to upgrade the skills and improve the work habits of heavy vehicle maintenance workers. Three strategies were considered to achieve this purpose: (1) development of structured on-the-job training programs (OJT); (2) expansion and modification of existing Ministry of Industry (MOI) and Ministry of Education (MOE) formal secondary vocational programs; and (3) assisting the GSLT in the development of its heavy vehicle maintenance training center. The third strategy was selected.

The training of most vehicle maintenance workers currently takes place on the job. In almost all companies, this training is unstructured and informal. The result of such training is a worker capable of performaing only a limited number of maintenance and repair tasks and even those tasks that are performed are not always performed in a satisfactory manner. Informal learning on the job will certainly continue to play a role in the development of worker skills. However, various analyses and investigations have indicated that even if a structured OJT program were in place, there would still remain a need for more formalized training. The nature of the required training is such that it is best conducted by trained

instructors working with groups of trainees in properly equipped shops and classrooms. The combination of instructor/shop/classroom is the most efficient and effective method for training workers whose skills are at the relatively low level of the average Egyptian vehicle maintenance worker.

The second option was to use MOE and MOI schools which are in existence and turning out respectively 1,200 and 250 automotive workers annually. Investigations indicated, however, that few of the graduates of these programs find jobs in the heavy transport industry. They have little interest in working as vehicle maintenance workers and the training they receive is insufficient, ineffective and unrelated to the needs of the companies. In a sense, it is a classic problem with regard to vocational education. The more remote the educational institute is from the industry served, the less relevant the training. After analyzing the MOE and MOI training programs it was decided that over the short and medium term it would be almost impossible to effect their programs in a way which would result in better trained maintenance personnel for the transport companies.

The strategy selected, assisting the GSLT in the development of its heavy vehicle maintenance training center, was judged to have the highest probability of at least

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partially meeting the medium and long term needs of the public sector transport companies for skilled maintenance workers.

The project has been developed in collaboration with the public sector transport companies. It is their workers who will be trained and they will finance the major portion of the cost of training. The companies are an integral part of the project and it is in their interest that it succeed.

Both project inputs and project outputs are judged to be sufficient to develop the planned GSLT training capabilities. The project strategy is balanced. Not only is adequate equipment provided, but care is taken to insure that required administrative and instructional capabilities are also developed. As a result there is a high probability that at the end of the project the GSLT training center will be a going concern which provides quality training and serves the companies' needs for skilled heavy vehicle maintenance workers.

B. ADMINISTRATION

Primary administrative responsibility for both implementing the project and directing the operation of GSLT training center will rest with the training center Board of Directors. The composition and responsibilities of the Board were noted in Part IV, Project Implementation.

The formal establishment of the Board is a Condition Precedent to the disbursement of USAID funds. In effect, the Board has been operating on an informal basis for some years. Both GSLT and bus and truck transport company officials have actively participated in developing the plans for the training center since the center's site was dedicated by President Sadat in 1977. The MOM first committed itself to supporting the project in a letter to the President of the GSLT written in January 1978. The relationship of the GSLT and the MOM is further strengthened in that the current Minister of the MOM is also the President of the General Trade Union of Egypt, of which the GSLT is the largest member union. The GSLT, the MOM and the bus and truck transport companies have historically had close working relationships. The formalization of these relationships for the purpose of implementing the project and directing the operations of the center are a natural result of past joint activities. However, despite their long working relationships, this will be the first time that the GSLT, the MOM and the transport companies have joined forces to implement a USAID financial project and to operate a training center. During the initial phase of the project, the Board will require a great deal of assistance and guidance in developing the RFP, evaluating proposals and negotiating a contract with a U.S. Contractor. This

assistance will be provided by the USAID Project Officer, although neither he nor the contractor's Chief of Party will actually be members of the Board. It is anticipated that, during the period between the signing of the Project Agreement and the signing of the host country contract, an estimated 7 months, the Project Officer will be required to devote approximately 65% of his work time to assisting and guiding the Board in the discharge of its responsibilities. Once the host country contract is signed, the percentage of Project Officer work time devoted to the project will probably drop to about 40%, as part of the advisory burden will fall to the Contractor's Chief of Party.

The project committee judges that, given its long informal history and the assistance and guidance to be provided by the Project Officer and the Chief of Party, the Board of Directors will prove to be a capable mechanism for project administration.

C. FINANCIAL

The USAID financial input of $4.5 million is deemed sufficient to obtain the quantities and qualities of technical assistance, participant training and commodity inputs required to implement the project

USAID cost estimates include contractor overhead (100% of short and long-term advisor salaries), a contractor fee (8% of the combined costs of technical assistance, participant training and overhead), as well as reasonable allowances for inflation (12.8% of total cost) and contingency (6.4% of total cost).

The GSLT has demonstrated its willingness to commit resources to the project by already having invested the equivalent of $765,000 in land and physical facilities for the training center. To complete the physical facility the GSLT need only invest an additional $85,000. Construction is in progress and funds are being expended as scheduled.

Funds to cover the operating costs of the center will be derived from three sources: the GSLT (20%), the MOM (20%); and the participating bus and truck transport companies (60%). Current estimates of operating costs ($500,000 per year at full capacity) are probably somewhat high. The reasons for this were noted in Part IV-K, Project Costs and Financing. GSLT, MOM and company budgets for the project are being developed based on this figure. If actual operating costs are lower, as expected, then funds will be released for other purposes.

Each of the three participating Egyptian organizations has the financial strength to discharge its monetary

73

obligation to the project. The MOM will include a line item in its 1980 budget for this purpose. The same will be done in future years. The GSLT has a yearly income derived from the dues of its 352,000 members amounting to approximately $454,000. A current certified GSLT balance sheet shows total assets equal to $1,199,821 of which $449,519 or 375% are liquid assets. Given the GSLT's demonstrated commitment to the project, it should experience no difficulty in discharging its financial obligation. The participating bus and truck transport companies, with one exception, are all large public sector companies which enjoy substantial GOE financial support. Funds required to discharge their financial obligations to the project represent an extremely small part of their overall budgets

The GOE will guarantee, in the Project Agreement, that funds to cover the operating costs of the training center will be provided. The financial obligations of the participating companies will be specified in the Training Agreements signed by the GSLT training center Board of Directors and the companies. The signing of these agreements is a Condition Precedent to the disbursement of USAID funds.

D. SOCIAL

The main social objective of the project is expressed in

the Mission's CDSS to improve the outreach and effectiveness of government services affecting the poor. Clearly, the more direct and immediate social benefits of the project will accrue to a limited segment of the population, workers trained at the GSLT center and GSLT administrators and instructors whose skills will be developed as a direct result of project technical assistance and training inputs. Nevertheless, to the degree that the project goal of improving the quality of bus and truck transport services is achieved, the project's main social objective will be promoted.

All major Egyptian public sector bus and truck transport companies will participate in the project. Thus, there does exist a potential for reaching large numbers of Egypt's poorer citizens. An improvement in the quality of bus services will have a direct and positive impact on the daily lives of the poor. The impact of improvement in trucking services will be much less direct. Prices of basic commodities cannot be expected to fall because of existing Government price control and subsidy systems. It can be expected, however, that the elimination of transport bottlenecks will lead to an increase in the local availability of basic commodities

Given the limited scope of the project and the long and

tenuous chain of causal links involved in reaching the project's main social objective, it can only be claimed the project takes steps in the proper direction. The impact of the project will be positive, but the magnitude of that impact will be difficult to measure.

At a more basic level the project will have a direct positive impact on the lives of those vehicle maintenance workers whose skills are upgraded through training provided by the GSLT. The target population for GSLT training is the approximately 5,000 mechanics employed by public sector bus and truck transport companies. Current base salaries for these workers are in the L.E. 25-30 per month range, which places them between the 2nd and 4th income deciles of Egyptian population, or slightly higher, if incentives were included. Training will increase worker productivity and, given existing worker incentive programs, result in increased incomes Should training result in actual promotion to a higher job category, increases in income would be greater. It is reasonable to expect that many of the workers trained by the GSLT will move into the 3rd to 5th income deciles

The project will have its most direct impact on the administrators and instructors of the GSLT training center. For the most part administrators will be career

public sector employees. Instructors will be drawn from both the public and private sectors. It is expected that none will have a university degree, but they will be graduates of Government vocational programs with significant teaching and work experience. Their current base salaries are in the range of L.E. 35-50 per month. The GSLT will offer a base salary of L.E. 80 per month with incentives totaling an additional L.E. 80. The total salary of L.E. 160 exceeds current total levels in the private sector for individuals with similar qualifications.

In sum, direct target populations are drawn from the lower and lower-middle socio-economic classes, and there is potential to affect the lives of these groups in a positive manner.

E. ENVIRONMENTAL

A threshhold decision has been reached that the proposed actions of this project are not ones that will have a significant negative effect on the human environment. (See Annex 4).

F. ECONOMIC JUSTIFICATION

A purpose of the Vehicle Maintenance Project is to produce 540 trained mechanics annually over the expected 10-year life span of the training center. These trained mechanics

are, in turn, to provide repairs and maintenance services on existing as well as new buses and trucks. Benefits of the investment take the form of longer average service life of the vehicles and better quality services due to less breakdowns on the road. Obviously, these benefits to the Egyptian economy are difficult to quantify in terms of monetary values. Particularly, the benefit of better quality services is difficult to measure. If buses, for example, have less breakdowns due to better maintenance, what are the benefits to the economy in terms of passenger time saved and increased company receipts?

Furthermore, it is not always clear what makes the vehicles last longer. Many factors besides a good maintenance program play important roles. Driver habits, road conditions, customer cooperation, management and other factors influence repair and service conditions of the buses and trucks.

The approach followed in this analysis is to estimate what benefits would have to accrue to the economy for this training program to be justified on economic grounds. This estimate is then related to productivity of the trainees and performance of the equipment serviced to assess the reasonableness of this required level of benefits.

Costs

The following table shows the estimated costs and outputs

of the vehicle maintenance project. Over the 10-year life span of the project, it is expected to graduate trained mechanics, 200 at the end of year 2, and 540 annually thereafter. Total costs are estimated at $3,823,000 in the first, $1,412,000 in the second, and $2,030,000 in the third year. From the fourth year on, the operating costs of the training program and base salary payments to the trainees will amount to $778,000 annually. Present value of the total costs at 15% discount is $8,522,500. Notice that the scrap value of the equipment and training facilities is assumed to be nil at the end of the 10th year.

To this extent, present value of the costs is somewhat overestimated.

COSTS ($000)

YEAR	NO. OF TRAINEES	START UP & OPERATING COSTS	BASE SALARY	TOTAL
1	0	3,823	-	3,823
2	200	1,309	103	1,412
3	540	1,752	278	2,030
4	540	500	278	778
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
10	540	500	278	778

Present Value in Year 1 of total costs at the 15% discount rate = $8,522,500.

Benefits

We have assumed for the purpose of computation that on the average trained mechanics have a working life of 25 years after the training. Given this and the number of trainees projected, it can be calculated that the benefit to the economy must be $799 per year per trainees for the project to yield a 15% economic return on costs. That is, each trained mechanic must increase the value of his productivity by $799 per year - equivalent to L.E. 47 per month. This increase in the value of his services can appear in various forms. It may take the form of longer service life of buses and trucks that he provides maintenance and repair services for or, in general, less frequent breakdowns due to his improved services. To obtain an estimate of what is required of his services, we make a reasonable assumption that each trained mechanic handles repair and maintenance services of 3 buses throughout the year. Let us also focus on the benefit of longer service life of the buses and neglect all other benefits for the sake of simplicity.

The average life of buses in Egypt is estimated to be between 5.88 to 6.67 years (see page 35 of the PRC-Harris report on "Technical and Feasibility Studies of Public Sector Vehicle Maintenance in Egypt," November 20, 1979). For comparison purposes, we use the 6-year average life. The following table shows annual capital costs for the 6 year and 7 year life assuming a 15% return.

AVERAGE LIFE	ANNUAL CAPITAL COST (%)	ANNUAL REPLACEMENT COST OF INITIAL INVESTMENT - $31,000
6 years	26.4	$8,184
7 years	24.0	$7,452
	Diff.	$ 732

If the average life span is extended from 6 years to 7 years the investment saving from slower depreciation amounts to $732 per bus per year given the initial investment cost of $31,000. (L.E. 22,000 which is the average cost of a Ward bus. Other buses are more costly.) Since each trained mechanic can service 3 buses, total saving amounts to $2,196 per year, which is far in excess of the required productivity increase of $799. An alternative way of looking at it is to estimate the necessary extension of the average life of a bus required to cover the productivity increase. The average lengthening of the bus life necessary to make the training investment worthwhile is about 4.4 months, which seems quite plausible. From this we conclude the Vehicle Maintenance project is economically sound.

ANNEXES

VEHICLE MAINTENANCE
TRAINING PROJECT IN
EGYPT (263-0114).

ANNEX I

PID FACESHEET

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT IDENTIFICATION DOCUMENT FACESHEET

TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE: A (A = ADD, C = CHANGE, D = DELETE)

PID

2. DOCUMENT CODE: 1

3. COUNTRY/ENTITY: EGYPT

4. DOCUMENT REVISION NUMBER: -

5. PROJECT NUMBER (7 DIGITS): 263-0114

6. BUREAU/OFFICE: A. SYMBOL: NE; B. CODE: 3

7. PROJECT TITLE (MAXIMUM 40 CHARACTERS): VEHICLE MAINTENANCE TRAINING

8. PROPOSED NEXT DOCUMENT: A. 3 (2 = PRP, 3 = PP); B. DATE MM/YY 08/79

9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION: a. INITIAL FY 79; b. FINAL FY 79

10. ESTIMATED COSTS ($000 OR EQUIVALENT, $1 = LE. 0.70)

FUNDING SOURCE	DOLLARS
A. AID APPROPRIATED	5400
B. OTHER U.S. 1.	
B. OTHER U.S. 2.	
C. HOST COUNTRY	5,220
D. OTHER DONOR(S)	
TOTAL	10,620

11. PROPOSED BUDGET AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	PRIMARY TECH. CODE D. LOAN	E. FIRST FY 79 F. GRANT	E. FIRST FY 79 G. LOAN	LIFE OF PROJECT H. GRANT	LIFE OF PROJECT I. LOAN
(1) SA	610	610		5430		5430	
(2)							
(3)							
(4)							
			TOTAL	5430		5430	

12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each): 730

13. SPECIAL CONCERNS CODES (MAXIMUM SIX CODES OF FOUR POSITIONS EACH): BU, TNG

14. SECONDARY PURPOSE CODE:

15. PROJECT GOAL (MAXIMUM 240 CHARACTERS)

INCREASE THE EFFICIENCY OF THE PUBLIC SECTOR LAND TRANSPORT COMPANIES

16. PROJECT PURPOSE (MAXIMUM 480 CHARACTERS)

PROVIDE TRAINED MANPOWER TO THE PUBLIC SECTOR BUS AND TRUCK LAND TRANSPORT COMPANIES.

17. PLANNING RESOURCE REQUIREMENTS (staff/funds)

4 MAN MONTHS OF CONTRACT CONSULTANT SERVICES FUNDED OUT OF TECHNICAL AND FEASIBILITY STUDIES AND LOW COST PROJECT SUPPORT.

18. ORIGINATING OFFICE CLEARANCE

Signature: [signature]

Title: Director

Date Signed: MM 04 DD 18 YY 79

19. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM 04 DD 30 YY 79

AID 1330-2 (3-76)

ANNEX 2

VEHICLE MAINTENANCE TRAINING
PROJECT 263-0114
PROJECT PAPER - GSLT

PJD APPROVAL CABLE

VV EGO070
RR RUFREG
DE RUEHC 8458/01 1601451
ZNR UUUUU ZZH
R 0914217Z JUN 79
FM SECSTATE WASHDC
TO AMEMBASSY CAIRO 0654/5
BT
UNCLAS STATE 148458.

09 JUN 79
TOR: 1506
CN: 36851
ACTION: AID
INFO: CHGE
AMB ECON ADM
CHR 11 MD

ACTION TO HSTD
ACTION TAKEN _____ DATE 6/14
INITIALS _____

AYDAC

E.O. 12065 N/A

TAGS:

SUBJECT: VEHICLE MAINTENANCE TRAINING (263-0114), PID REVIEW, BY NEAR EAST ADVISORY COMMITTEE (NEAC)

1. NEAC REVIEWED SUBJECT PID MAY 24 AND APPROVED PP DEVELOPMENT. AS PART OF NEAC ACTION, NE/AA DELEGATED MISSION FINAL PROJECT APPROVAL AUTHORITY

2. THE PID IDENTIFIED FOUR MAJOR ISSUES WHICH NEAC AGREED WERE KEY TO PROJECT DEVELOPMENT.

- A. RETENTION OF VEHICLE MAINTENANCE WORKERS IN EGYPT AFTER BECOMING SKILLED THROUGH THIS TRAINING PROGRAM.

- B. RETENTION OF INSTRUCTORS IN TWO TRAINING CENTERS.

- C. INFRASTRUCTURAL INEFFICIENCIES WITHIN PUBLIC SECTOR TRANSPORT SYSTEM.

D. ESTABLISHMENT OF AN ADMINISTRATIVE ARRANGEMENT WHICH WOULD PROVIDE A COORDINATING MECHANISM BETWEEN THE CTA AND GSLT.

PARAGRAPHS 3 AND 4 BELOW RELATE NEAC'S COMMENTS ON ISSUES A, B, C. NEAC CONCLUDED ISSUE D MUST BE RESOLVED BY MISSION DURING PP DEVELOPMENT. AID/W WOULD LIKE TO BE APPRISED ON A TIMELY BASIS DURING THE PREPARATION OF THE PP OF PROGRESS IN RESOLVING ABOVE FOUR MAJOR ISSUES.

3. A MAJOR NEAC CONCERN WAS ISSUE, IDENTIFIED IN PID OF RETAINING BOTH VEHICLE MAINTENANCE WORKERS AND THEIR INSTRUCTORS IN EGYPT AFTER BEING TRAINED THROUGH THIS PROJECT. NEAC NOTED PID POSITIVE RESPONSE IN SEEKING PROBABLE SOLUTIONS THIS ISSUE. MISSION PROPOSAL TO ENCOURAGE CTA AND GSLT TO ESTABLISH A MORE COMPETITIVE OR EQUITABLE SALARY FOR INSTRUCTORS INVOLVED IN PROJECT APPEARS A LIKELY APPROACH TO CREATING AN INCENTIVE FOR THEM TO REMAIN INSTRUCTORS IN EGYPT. NEAC CONSIDERED EFFECTIVE PROCEDURES FOR THE RETENTION OF INSTRUCTORS TO BE ESSENTIAL TO SUCCESS OF PROJECT.

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ATTEMPTING TO MATCH EGYPTIAN SKILLED WORKERS SALARIES WITH THOSE OBTAINABLE IN OTHER NE COUNTRIES IS PROBABLY

UNREALISTIC. HOWEVER, IT WAS CONCLUDED THAT A DIFFERENTIAL SALARY LEVEL COULD BE ESTABLISHED WHICH MIGHT BE SUFFICIENT TO RETAIN WORKERS. THE MISSION SHOULD ENCOURAGE THE GOE TO WORK TOWARD RETAINING WORKERS WITH BALANCED BENEFITS RATHER THAN ATTEMPTING TO REACH ABSOLUTE WAGE EQUALITY WITH OTHER COUNTRIES.

MISSION MAY WISH TO SUGGEST TO GOE OTHER INDUCEMENTS TO RETAIN WORKERS SUCH AS CHARGING MIGRATING WORKERS FOR TRAINING RECEIVED OR INCREASING NON-SALARY BENEFITS FOR WORKERS TRAINED AND REMAINING IN COUNTRY.

NEAC REALIZED THAT THERE IS AN ECONOMIC LIMIT TO WHAT CAN BE DONE BY THE PUBLIC SECTOR AND SUGGESTS MISSION EXAMINE WHETHER A GREATER USE OF THE PRIVATE SECTOR IN THE PARTICULAR FIELD OF HEAVY VEHICLE MAINTENANCE PARTICULARLY FOR HIGHLY SPECIALIZED COMPLEX REPAIRS IS FEASIBLE. GOE MAY WISH TO CONSIDER THE USE OF INCENTIVES TO STIMULATE PRIVATE SECTOR INVESTMENT IN VEHICLE MAINTENANCE.

THE USE OF WOMEN AS A PARTIAL SOLUTION TO THE LABOR MIGRATION PROBLEMS IS ENCOURAGED. THERE ARE OBVIOUS QUESTIONS CONCERNING THE CULTURAL CONSTRAINTS REGARDING WOMAN'S TRADITIONAL ROLE. HOWEVER, NEAC URGES MISSION MAKE EVERY EFFORT TO INCORPORATE TRAINING OF WOMEN AS AN INTEGRAL PART OF THIS PROJECT. REQUEST MISSION ADVISE AID/W THE NAME OF PERSON ON PROJECT COMMITTEE WHO WI-BE RESPONSIBLE FOR SOCIAL ANALYSIS AND ROLE OF WOMEN.

NEAC SUGGESTS THAT ECONOMIC ANALYSIS SHOULD, AMONG OTHER THINGS, EXAMINE COST OF TRAINING A SKILLED WORKER, COST PER WORKER RETAINED IN EGYPT AND POINT AT WHICH INVESTING IN TRAINING OF THIS SORT BECOMES AN INEFFICIENT MEANS TO PROJECT OBJECTIVES.

4. NEAC RECOGNIZED IMPORTANCE OF IBRD TRANSPORTATION SECTOR STUDY AND INFLUENCE THOSE RESULTS MAY HAVE ON PROJECT DESIGN. NEAC SUGGESTS MISSION PROJECT COMMITTEE MAINTAIN CLOSE CONTACTS WITH WORLD BANK TEAM, OBTAINING AS MUCH PERTINENT INFORMATION AS NECESSARY TO HELP ANSWER ISSUES CONCERNING PUBLIC SECTOR TRANSPORTATION INFRASTRUCTURE. MISSION PROJECT COMMITTEE SHOULD HAVE A CLEAR IDEA OF SCOPE AS WELL AS DETAILS OF WORLD BANK SECTOR STUDY ANTICIPATING HOW STUDY'S OUTCOMES COULD INFLUENCE AND POSSIBLY SUPPORT DEVELOPMENT OF PROJECT. MISSION PROJECT COMMITTEE ALSO SHOULD HAVE IN MIND POSSIBLE DESIGN CHANGES IN PROJECT IN EVENT THAT WORLD BANK OR AID VEHICLE MAINTENANCE FEASIBILITY STUDIES DO NOT FORSCOMPARISON, PROVIDE ACCEPTABLE ANSWERS OR GUIDANCE CONCERNING PROJECT ISSUES. SPECIFICALLY, MID PRESENTS A TRAINING PROJECT WITH SUPPORT AND DEVELOPMENT OF INVOLVED INSTITUTIONAL INFRASTRUCTURE LEFT TO OTHER AGENCIES OR LINES OF ACTION. DURING PP DEVELOPMENT IT MAY BECOME OBVIOUS THAT ONE OR
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MORE ASPECTS OF THE INSTITUTIONAL INFRASTRUCTURE IS NOT ADEQUATELY PROVIDED. IN THAT EVENT, MISSION MAY WISH TO CONSIDER A PROJECT DESIGN CHANGE TO INCORPORATE AN ADDITIONAL ELEMENT.

5. GIVEN CURRENT STATUS OF PROJECT DEVELOPMENT INCLUDING UNEXPECTED DELAY OF VEHICLE MAINTENANCE TRAINING DESIGN TEAM UNTIL FIRST OF JUNE AND RAPIDLY APPROACHING END OF FY REQUEST MISSION'S ADVICE PRACTICALITY THIS PROJECT BEING AN FY 79 OBLIGATION? ADVISE. VANCE
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ANNEX 3

VEHICLE MAINTENANCE TRAININ(
Project #263-0114
Project Paper - GSLT

LOGICAL FRAMEWORK

LOGICAL FRAMEWORK

VEHICLE MAINTENANCE TRAINING
PROJECT #263-0114

PROJECT OBJECTIVES	VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Goal To improve the quality of bus and truck transport services provided to the public	(1) Ratio of buses in service to passangers demanding service increased by 20% (2) Average goods delivery time reduced by 20%	Bus and Truck Transport Company records, and on site inspection	(1) GOE transport policy is rationalized. (2) GOE financial support for public sector transport companies remains at least at its current level for next 3 to 5 years
Sub-Goal To increase the efficiency of vehicle maintenance systems	(1) Average vehicle life increased by 20% (2) Average rate of vehicle break down reduced by 20% (3) Average period of down time per breakdown reduced by 20%	Bus and Truck Transport Company records, and on site inspection	(1) Vehicle Maintenance facilities are improved: better managed and organized; cleaned; and where lacking, tools, equipment and parts provided (2) Incentives are sufficient to retain trained workers at their jobs
Purpose To upgrade the skills and improve the work habits of vehicle maintenance workers	GSLT training center implements planned curriculum and trains at least 200 vehicle maintenance workers during project year 2, 540 during project year 3, and 540 per year thereafter	GSLT records and reports and on site inspection	(1) Salaries and incentives are sufficient to retain trained instructors and administrators at the GSLT training center (2) Training center continues to enjoy adequate MTT and company financial support
OUTPUTS For GSLT Training Center: (1) Trained Administrators (2) Trained Instructors (3) Curriculum Established (4) Shops Equipped (5) Classrooms Equipped (6) Administrative Procedures Established (7) Instructional Procedures Established	(1) 6 Administrators (2) 22 Instructors (3) 24 Courses (20 programs) (4) 8 Shops (5) 9 Classrooms (6) 1 Plan (7) 1 Plan	GSLT records and reports, Contractor reports and on site inspection.	(1) Construction of training facility completed as scheduled (2) GSLT provides administrators and instructors to be trained as planned (3) Funds provided by GSLT, MOM and companies are adequate to cover center's operating costs during life of project
Inputs USAID: (1) Technical Assistance (a) long-term (b) short-term (2) Participant Training (a) long-term (b) short-term (3) Commodities	(1) Technical Assistance (a) 60 man months (b) 70 man months (2) Participant Training (a) none (b) 110 man months (3) Commodities equipment, tools, training aids etc. required to operate GSLT training center	GSLT records and reports, Contractor reports and on site inspection	(1) Funds provided for technical assistance, participant training and commodities are adequate (2) Qualified contractor available

ANNEX 4

VEHICLE MAINTENANCE TRAINING
Project #263-0114
Project Paper - GSLT

STATUTORY CHECK LIST

AAC (2) - PROJECT CHECKLIST

VEHICLE MAINTENANCE TRAINING (263-0114)

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?

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FY 80 App. Act 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 will 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. The financial plan and analysis are part of the Project Paper.

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

No further legislative action is required other than action notifying that the Grant Agreement is signed.

4. FAA Sec. 611(b); FY 79 App. Act Sec. 101; FY 80 App. Act Sec. (501.) If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?

N/A

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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.	No
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.	This project will improve the technical efficiency of industry and strengthen the labor union sponsoring the training center.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise	U.S. private enterprise will be the source of project inputs.
9. FAA Sec. 611(f), Sec. 612(b). 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 that currencies owned by the U.S. are utilized to meet the cost of contractual and other services.	The Grant Agreement will provide that Egypt will assure to the maximum extent possible that it will contribute local currencies to support this project.

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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?	Yes, but see Annex 8 of the Project Paper.
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Yes
12. FY 79 App. Act, Sec. 608; FY 80 App. Act Sec. (521.) If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?	N/A

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria — N/A

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

(1) [103] for agriculture, rural development or nutrition; if so (a) extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural 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 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 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.

(2) [104] for population planning under sec. 104(b) or health under sec. 104(c); if so, (a.) 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 health posts, commercial distribution systems and other modes of community research.

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

(4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is: (1) (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 new methods of energy production; and (b) facilitative of geological and geophysical survey work to locate potential oil, natural gas, and coal reserves and to encourage exploration for potential oil, natural gas, and coal reserves.

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(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 processes and techniques;

(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 placed 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.)

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 the latter cost-sharing requirement been waived for a "relatively least developed" country)?

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"?

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.

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?

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? **Yes**
To the extent possible, does it reflect the policy directions of section 102? **Yes**

b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities? **No.**

4C(3) - STANDARD ITEM CHECKLIST

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

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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
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him?	Yes
3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies will commodities be insured in the United States against marine risk with a company or companies authorized to do marine insurance business in the U.S.	N/A
4. FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?	N/A
5. FAA Sec. 603. 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.	N/A
6. FAA Sec. [illegible]. Will U.S. government excess personal property be utilized wherever practicable in lieu of the procurement of new items?	Yes
7. FAA Sec. 621. If technical assistance is financed, to the fullest extent practicable will such assistance, goods and professional and other services from private enterprise, be furnished on a	Yes.

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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?

8. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available? **Yes.**

9. FY 79 App. Act, Sec. 105; FY 80 App. Act Sec. [505.] Does the contract for procurement contain a provision authorizing the termination of such contract for the convenience of the United States? **Yes.**

B. Construction **N/A**

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

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?

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?

C. Other Restriction

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**

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2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?	N/A
3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?	Yes.
4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, sale, longterm lease, exchange or guaranty of motor vehicles manufactured outside the U.S.?	It is not pe
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(j). To compensate owners for expropriated nationalized property?	Yes.
c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?	Yes.
d. FAA Sec. 662. For CIA activities?	Yes.
e. FY 79 App. Act, Sec. 104; FY 80 App. Act Sec. [504.] To pay pensions, etc., for military personnel?	Yes.
f. FY 79 App. Act, Sec. 106; FY 80 App. Act. Sec. [506.] To pay U.N. assessments?	Yes.

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g. FY 79 App. Act, Sec. 107; FY 80 App. Act. Sec. [507.] To carry out provisions of FAA section 209(d)? (Transfer of FAA funds to multilateral organizations for lending.) — Yes.

h. FY 79 App. Act, Sec. 112; FY 80 App. Act Sec. [511.] To finance the export of nulcear equipment, fuel, or technology or to train foreign nationals in nuclear fields? — Yes.

i. FY 79 App. Act, Sec. 601; FY 80 App. Act Sec. [515.] To be used for publicity or propaganda purposes within U.S. not authorized by Congress? — Yes.

ANNEX 5

VEHICLE MAINTENANCE TRAINING
PROJECT 263-0114
PROJECT PAPER-GSLT

INITIAL ENVIRONMENTAL EXAMINATION

Project Location: Cairo, Egypt

Project Title: Vehicle Maintenance Training (No. 263-0114)

Funding (Fiscal Year and Amount): FY 1980, $4.5 million

IEE Prepared by: Dale C. DeButts, USAID/Egypt

Date : December 14, 1979

Environmental Action Recommended: Negative Determination

Mission Decision: Approval/Disapproval of Environmental Action Recommended in the IEE

APPROVED: _____

DISAPPROVED: _____

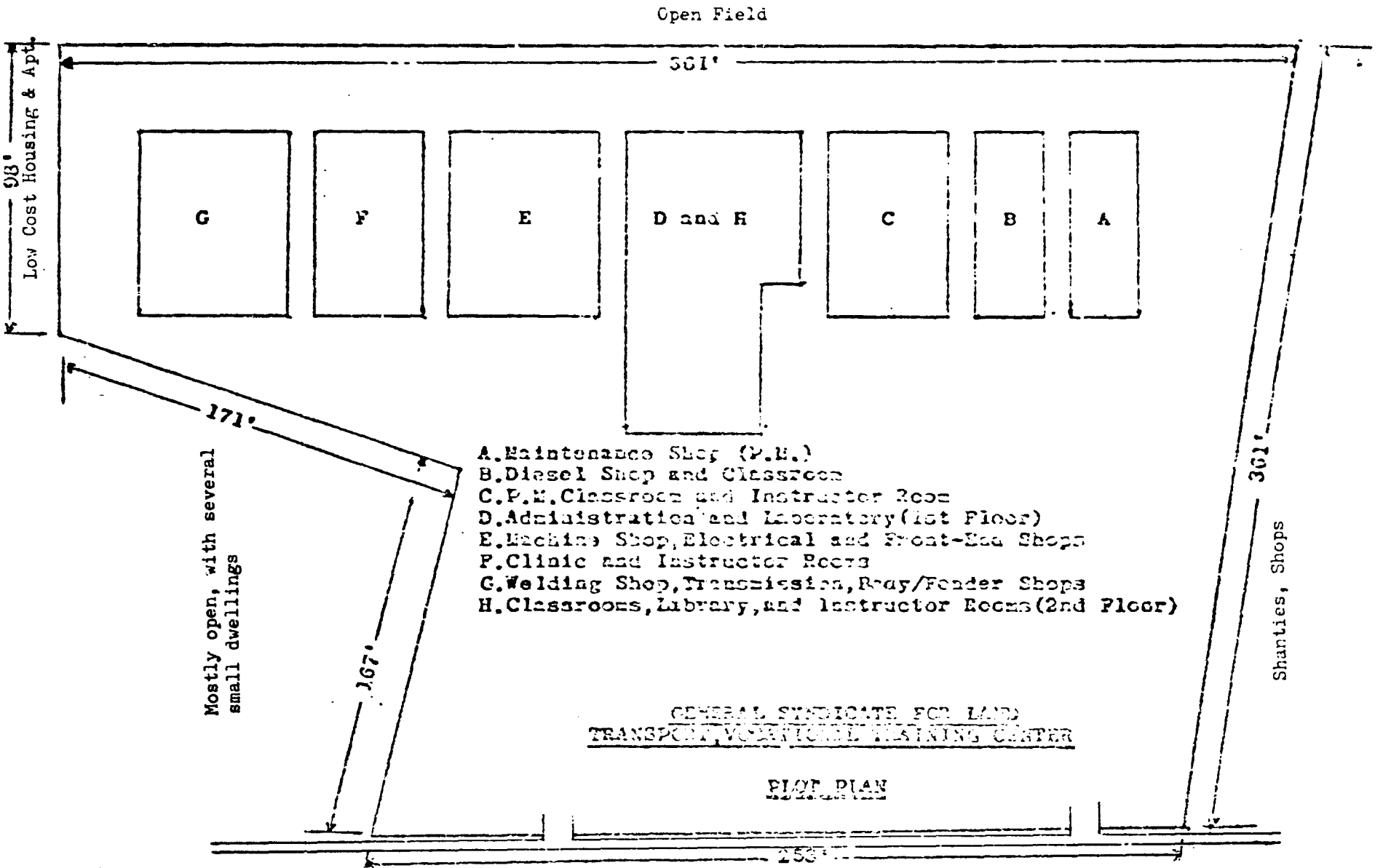
DATE: _____

CONCURRENCES:

Jack Snead: _____
Environmental Officer, IIDPS

L.Michael Hager _____
Legal Officer

Note: Entire compound surrounded by 3-meter high masonry wall



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IEE

1. Project Location: Cairo, Egypt.

2. Project Title: Vehicle Maintenance Training

3. Funding (Fiscal Year and Amount): FY 1980, $4,458,000

4. IEE Prepared by: Dale C. De Butts
   Date : December 14, 1979

5. Action Recommended: Negative Determination

6. Discussion of Major Environmental Relationships of Project Relevant to Attached Impact Identification and Evaluation Form:

This project will assist the General Syndicate for Land Transport (GSLT) to equip, staff and operate a training center. The center will upgrade the skills and improve work habits of vehicle maintenance workers employed by the public sector bus and truck transport companies. The facility is currently under construction with completion anticipated by July, 1980. Site selection, design, A & E and construction has been directed and financed entirely by the GSLT, with no USAID involvement.

The training center is located in the Mataria District of Cairo, on the northern edge of the city adjacent to the main railway track to Alexandria. The site is shown on attached sketch. All construction, with the exception of footings, is above grade. The physical plant consists of workshops, classrooms, offices and ancillary facilities. The sole purpose of the plant is to train maintenance workers; no production work or actual vehicle maintenance will be performed there.

The project will have no significant environmental impact.

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IMPACT IDENTIFICATION AND EVALUATION FORM

Impact Areas and Sub-areas	Impact Identification and Evaluation 1/
A. LAND USE	
1. Changing the character of the land through:	
a. Increasing the population	N
b. Extracting natural resources	N
c. Land clearing	N
d. Changing soil character	N
2. Altering natural defenses	N
3. Foreclosing important uses	M
4. Jeopardizing man or his works	N
5. Other factors	
_____	_____
_____	_____
B. WATER QUALITY (Harbor Waters)	
1. Physical state of water	N
2. Chemical and biological states	N
3. Ecological balance	N
4. Other factors	
_____	_____
_____	_____

1/ N - No environmental impact
L - Little environmental impact
M - Moderate environmental impact
H - High environmental impact
U - Unknown environmental impact

IMPACT IDENTIFICATION AND EVALUATION FORM

Page 2

C. ATMOSPHERIC

1. Air additives	N
2. Air pollution	L
3. Noise pollution	--
4. Other factors	
_____	_____
_____	_____

D. NATURAL RESOURCES

1. Diversion, altered use of water	N
2. Irreversible, inefficient commitments	N
3. Other factors	
_____	_____
_____	_____

E. CULTURAL

1. Altering physical symbols	N
2. Dilution of cultural traditions	N
3. Other factors	
_____	_____
_____	_____

F. SOCIOECONOMIC

1. Changes in economic employment patterns	L
2. Changes in population	N
3. Changes in cultural patterns	N
4. Other factors	
_____	_____
_____	_____

IMPACT IDENTIFICATION AND EVALUATION FORM Page 3

G. HEALTH

1. Changing a natural environment	N
2. Eliminating an ecosystem element	N
3. Other factors	

H. GENERAL

1. International impacts	N
2. Controversial impacts	N
3. Other factors	

I. OTHER POSSIBLE IMPACTS (not listed above)

Prepared By: D. C. De Butts Date: December 1, 1979

Project Location: Cairo, Egypt

Project Title: Vehicle Maintenance Training 263-0114

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E.O. 12065: N/A

TAGS:

SUBJECT: VEHICLE MAINTENANCE TRAINING PROJECT 263-0114

REF: CAIRO 02618

1. NE BUREAU ENVIRONMENTAL COORDINATOR HAS DETERMINED PROJECT WILL HAVE NO SIGNIFICANT ENVIRONMENTAL IMPACT. ACTION REQUIRED FOR PP IS EXPLANATORY PARAGRAPH ON ENVIRONMENT PER REFTEL PARAS A AND B WHICH WOULD REPLACE THE NEED FOR THE COMPLETION OF AN INITIAL ENVIRONMENTAL EXAMINATION (IEE). VANCE
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ANNEX 6
VEHICLE MAINTENANCE TRAINING
PROJECT PAPER-GSLT

PROJECT AUTHORIZATION

PROJECT AUTHORIZATION

Name of Country: Arab Republic of Egypt Name of Project: Vehicle Maintenance Training Project

Project No.: 263-0114

1. Pursuant to Part II, Chapter 4, Section 531 of the Foreign Assistance Act of 1961, as amended (the "Act"), I hereby authorize the Vehicle Maintenance Training Project (the "Project") for the Arab Republic of Egypt ("Cooperating Country") involving planned obligations of not to exceed Four Million Four Hundred Fifty-eight Thousand United States Dollars ($4,458,000) in grant funds over a one-year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing the foreign exchange and local currency costs of goods and services required for the Project.

2. The Project will assist the Cooperating Country to establish a heavy-vehicle-maintenance training center in Cairo to serve the training needs of the major Egyptian public sector bus and truck transport companies. The Project will provide training in several key aspects of vehicle maintenance and will upgrade a number of maintenance workers to the level of skilled mechanics each year.

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

4. a. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the Project shall have their source and origin in the Cooperating Country or in the United States, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may otherwise agree in writing, be financed on flag vessels of the United States.

b. Conditions Precedent to Disbursement

(1) Initial Disbursement

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

(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 that the General Syndicate for Land Transport (GSLT) has been given full responsibility and authority for implementation of the Project;

(c) Evidence of the establishment of a Board of Directors which will direct implementation of the Project and administer the training center, and evidence that representatives of the Ministry of Manpower and Vocational Training, GSLT, the Ministry of Transport, participating companies and the training center will serve on the Board.

c. Covenants

The Grantee shall:

(1) Furnish A.I.D. a detailed salary scale for instructors and an incentive plan for the training center staff, showing a base salary of L.E. 80 and total incentives of at least L.E. 80.

(2) Provide on-the-job training to a minimum of twenty-two instructors in addition to the twenty-two who will receive training in the United States.

(3) Execute agreements with participating companies that they will pay employees their base salaries while they attend the GSLT training center.

5. Based upon the justification set forth in the Project Paper, I hereby determine, in accordance with Section 612(b) of the Act, that the expenditure of United States Dollars for the procurement of goods and services in Egypt is required to fulfill the purposes of this Project the purposes of this Project cannot be met effectively through the expenditure of U.S.-owned local currencies for such procurement; and the administrative official approving local cost vouchers may use this determination as the basis for the certification required by Section 612(b) of the Act.

Director, USAID/Cairo

Date

ANNEX 7

VEHICLE MAINTENANCE TRAINING
PROJECT #263-0114
PROJECT PAPER - CSLT

REQUEST FOR ASSISTANCE

رقم الصادر
رقم الملف
القاهرة في

GENERAL SYNDICATE FOR LAND TRANSPORT
90, EL GALAA STR. CAIRO

النقل البري
جمهورية مصر العربية
شارع الجلاء — القاهرة
ت ٩١٨٧٥٥ / ٩٦٩١٨ / ٧٥٢٦٢
تلغرافيا : ترانسبديك

Cairo, 17th December 1977

Mr. de Butts.
US A I D
Training Office:
USA Embassy
Cairo

Dear Sir,

Refering to our letter dated February 1977 given in person to Mr. Vittorio Brod, Second Secretary of USA Embassy Cairo regarding our intention for establishing a " VOCATIONAL TRAINING CENTER " by the aid of US A I D.

We have the pleasure to enclose herewith a Memorandum for the " VOCATIONAL TRAINING CENTER PROJECT ".

Hoping that you will submit this project to your esteemed responsibles for the necessary studies for mutual technical and financial participation.

We seize this opportunity to send you our Best Wishes for a Merry X'mas and a Happy New Year 1978.

Thanking you in anticipation, we remain, Dear Sirs,

Truly Yours,

MOHAMED EL OKEILY.
PRESIDENT OF L.T.U.

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بسم الله الرحمن الرحيم

34.

وزارة القوى العاملة والتدريب المهني

مكتب وكيل الوزارة

قطاع تنمية القوى العاملة

صادر
٩٦
١٩٧٨/١/٢٨

السيد / رئيس النقابة العامة لعمال النقل البرى

تحية طيبة ٠٠ وبعد ،

ايماء الى خطابكم المؤرخ فى ١٩٧٧/١٢/٢٦ الى السيد وزير القوى العاملة والتدريب بشأن مشروع انشاء معهد للتدريب على مهن اصلاح وصيانة السيارات ومدى امكان مساهمة الوزارة المادية والمعنوية فى هذا المشروع الحيوى ٠

أرجو الاحاطة بأن أهداف المشروع تتفق وأهداف الدولة فى تنمية القوى العاملة وفى التوسع فى التدريب على المهن الفنية فى المجالات التى يحتاج اليها سوق العمل الداخلى والخارجى ٠ غير أن الوزارة تأسف لعدم امكانها المساهمة المادية فى أصول المركز المتعلقة بالمصروفات الانشائية لعدم وجود اعتماد لذلك بالميزانية ووزارة القوى العاملة والتدريب المهنى على أتم استعداد لتغطية تكاليف العملية التدريبية والتى تشمل مكافآت المدرسين والمدربين وثمن الخامات بالاضافة الى حوافز مناسبة للمدربين ٠

والسلام عليكم ورحمة الله وبركاته ،

وكيل الوزارة

((أحمد عبد السلام كساب))

تحريرا فى : ١٩٧٨/١/٢٨

Received 1/25/78

ANNEX [illegible]

VEHICLE MAINTENANCE
TRAINING
PROJECT #263-0114
PROJECT PAPER - GSLT

PROJECT COST DATA

ESTIMATED PROJECT COSTS FOR PARTICIPANT TRAINING (ALL COSTS IN DOLLARS)

CATEGORY OF EXPENDITURE	BASE YEAR DATA (1979)	CURRENCY OF EXPENDITURES	ALL TRAINING IN YEAR 1 (FY 1980) FX ($)	LC (L.E.)	TOTAL
Training*	2,000/pm	$ (FX)	220,000	-	220,000
Local Per Diem	1,800/pm	$ (FX)	198,000	-	198,000
Local Expense	300/trip	$ (FX)	7,500	-	7,500
Air Fare	1,350/trip	$ (FX)	33,750	-	33,750
Inter.Per Diem	250/trip	$ (FX)	6,250	-	6,250
Excess Baggage	250/trip	$ (FX)	6,250	-	6,250
U.S.Travel	1,200/trip	$ (FX)	30,000	-	30,000
Eng.Lang. Trng.	----	$ (FX)	80,000	-	80,000
SUB-TOTAL			581,750	-	501,750
Inflation	Year 1 - 10%**		50,175	-	50,175
Total Cost			631,925	-	631,925
INPUTS	person months (pm) roundtrips (trips)		110 pm 25 trips		

* Course Fee
** Excluding English Language Training

ESTIMATED PROJECT COSTS FOR COMMODITIES (All Costs in U.S. Dollars)

Base Cost (Early 1979 Prices):	914,568
Handling and Shipping (Estimate):	285,802
Sub Total:	1,200,370
Inflation (25% of Base Cost - Estimated Price Increase Between Early 1979 and Mid 1980):	228,642
Total:	1,429,012

ESTIMATED PROJECT COSTS FOR LONG-TERM TECHNICAL ASSISTANCE - (ALL COSTS IN DOLLARS)

CATEGORY OF EXPENDITURE	BASE YEAR DATA (1979)	CURRENCY OF EXPENDITURE	YEAR 1 (FY 1980)			YEAR 2 (FY 1981)			YEAR 3 (FY 1982)			TOTAL FOR PROJECT		
			FX ($)	LC (L.E.)	TOTAL	FX ($)	LC (L.E.)	TOTAL	FX ($)	LC (L.E.)	TOTAL	FX ($)	LC (L.E.)	TOTAL
Salaries *	4,200/mm	$ (FX)	50,400	-	50,400	100,800	-	100,800	100,800	-	100,800	252,000	-	252,000
Air Fares	3,200/trip	$ (FX)	3,200	-	3,200	3,200	-	3,200	6,400	-	6,400	12,800	-	12,800
Excess Baggage	500/trip	$ (FX)	500	-	500	500	-	500	1,000	-	1,000	2,000	-	2,000
Inter. Per Diem	500/trip	$ (FX)	500	-	500	500	-	500	1,000	-	1,000	2,000	-	2,000
Pick Up HOV & HHE	5,000/trip	$ (FX)	5,000	-	5,000	5,000	-	5,000	10,000	-	10,000	20,000	-	20,000
Storage HHE	75/mm	$ (FX)	900	-	900	1,800	-	1,800	1,800	-	1,800	4,500	-	4,500
Ed. Allowance	900/mm	$ (FX)	10,800	-	10,800	21,600	-	21,600	21,600	-	21,600	54,000	-	54,000
Hse. Allowance	1,500/mm	L.E. (LC)	-	18,000	18,000	-	36,000	36,000	-	36,000	36,000	-	90,000	90,000
Other Costs	1,200/mm	L.E. (LC)	-	14,400	14,400	-	28,800	28,800	-	28,800	28,800	-	72,000	72,000
SUB-TOTAL			71,300	32,400	103,700	133,400	64,800	198,200	142,600	64,800	207,400	347,300	162,000	509,300
Inflation	Yr.1 / Yr.2 / Yr.3													
Dollars	10% / 9% / 8%		7,130	6,480	13,610	26,546	24,624	51,170	42,067	33,566	75,633	75,743	64,670	140,413
Pounds	20% / 19% / 18%													
Overhead	100% of base salaries adjusted for inflation		40,400	-	40,200	100,716		100,716	108,780	-	108,780	255,896	-	255,896
TOTAL COST			124,830	38,880	163,510	260,662	89,424	350,086	293,447	98,366	391,813	678,739	226,670	905,409
Inputs	man months (mm) one-way trips (trips) (4 persons per trip)		12 mm 1 trip			24 mm 1 trip			24 mm 2 trips			60 mm 4 trips		

*Base salary: $3,500/mm, plus 10% differential, plus 10% incentive, = $4,200/mm

ESTIMATED PROJECT COSTS FOR SHORT TERM TECHNICAL ASSISTANCE (ALL COSTS IN DOLLARS)

CATEGORY OF EXPENDITURE	BASE YEAR DATA (1979)	CURRENCY OF EXPENDITURE	YEAR 1 (FY 1980)			YEAR 2 (FY 1981)			YEAR 3 (FY 1982)			TOTAL FOR PROJECT		
			FX ($)	LC (L.E.)	TOTAL	FX ($)	LC (L.E.)	TOTAL	FX ($)	LC (L.E.)	TOTAL	FX ($)	LC (L.E.)	TOTAL
Salaries *	4,200/ pm	$ (FX)	71,400	-	71,400	96,600	-	96,600	126,000	-	126,000	294,000	-	294,000
Local Per Diem	2,220/ pm	L.E. (LC)	-	37,740	37,740	-	51,060	51,060	-	66,600	66,600	-	155,400	155,400
Local Expense	700/pm	L.E. (LC)	-	11,900	11,900	-	16,100	16,100	-	21,000	21,000	-	49,000	49,000
Air Fare	1,350/trip	$ (FX)	5,400	-	5,400	6,750	-	6,750	6,750	-	6,750	18,900	-	18,900
Inter.Per Diem	250/trip	$ (FX)	1,000	-	1,000	1,250	-	1,250	1,250	-	1,250	3,500	-	3,500
Excess Baggage	250/trip	$ (FX)	1,000	-	1,000	1,250	-	1,250	1,250	-	1,250	3,500	-	3,500
SUB-TOTAL			78,800	49,640	128,440	105,850	67,160	173,010	135,250	87,600	222,850	319,900	204,400	524,300
Inflation	Yr.1 Yr.2 Yr.3													
Dollars	10% 9% 8%		7,880	9,928	17,808	21,064	25,520	46,584	39,898	45,376	85,274	68,842	80,824	149,666
Pounds	20% 15% 10%													
Overhead	100% of base salaries adjusted for inflation		65,450	-	65,450	96,519	-	96,519	135,975	-	135,975	297,944	-	297,944
SUB-TOTAL			152,130	59,568	211,698	223,433	92,680	316,113	311,123	132,976	444,099	686,686	285,224	971,910
Proj.Eval. Contract Team			13,000	2,800	15,800	20,800	4,480	25,280	31,200	6,720	37,920	65,000	14,000	79,000
TOTAL COST			165,130	62,368	227,498	244,233	97,160	341,393	342,323	139,696	482,019	751,686	299,224	1050,910
Inputs	person months (pm) roundtrips (trips)		17 pm 4 trips			23 pm 5 trips			30 pm 5 trips			70 pm 14 trips		

*Base salary: $3,500/pm, plus 10% differential, plus 10% incentive = $4,200/pm

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ANNEX 9

VEHICLE MAINTENANCE TRAINING
PROJECT #263-0114
PROJECT PAPER - GSLT

RECOMMENDATION TO PURCHASE
EGYPTIAN POUNDS WITH U.S. DOLLARS

ANNEX 9

Recommendation to Purchase Egyptian Lbs. with U.S. Dollars.

The total cost of this three year project is estimated at $6.9 million. The USAID financial contribution is set at $4.5 million, or 64.8% of total cost. Egyptian entities will provide the local currency eqivalent of $2.4 million, or 35.2% of total cost.

Over the life of the project, $ .6 million, or 13.3% of the total USAID financial input will be required to cover local currency costs associated with the provision of technical assistance. Included in these local currency costs are local per diem, housing allowances and other miscellaneous costs such as procurement of secretarial and interpreting services.

To cover these costs, the Mission will purchase Egyptian pounds with U.S. dollars provided by the Project. The Egyptian pounds will in turn be made available to the various Egyptian entity (s) responsible for project implementation for disbursement in accordance with the agreements reached between USAID and the GOE in the Project Agreement

One reason for using dollar funds in conjunction with Egyptian pounds costs is that this represents an additional real resource to the Egyptian economy and provides an incentive for the Egyptian Government to implement new initiatives that otherwise it might not be able to undertake. The Mission considered the use of excess U.S. owned local currency for these Egyptian pounds costs, however, the use of existing U.S. owned local currency would add no additional real resources to the economy. Given the GOE's need to restrict the growth in the money supply to correspond to the growth in real resources in the economy, the inflationary impact of using U.S. owned local currency would have to be offset by reduced GOE disbursements on other programs. Maintaning this fiscal balance is also required under the terms of the currenct IMF Standby Agreement with Egypt--which the U.S. and other donors have strongly supported.

Consequently, if U.S. owned local currency were used, it is doubtful that the various Egyptian entities would enter into agreements since they would have to sustain budgetary cutbacks in other areas. Even if the various Egyptian entities were to obtain budgetary funds to cover all project local currency costs, it is doubtful that they could commit them to this project unless the added fillip of dollar funding for local currency costs were assured. Given the above considerations and the fact that the Vehicle Maintenance Training Project is fully consistent with the Congressional Mandate of the Foreign Assistance Act to undertake activities designed to improve the economic position and quality of life of the poor majority, we have concluded Project costs should be dollar funded.

ANNEX 10

VEHICLE MAINTENANCE TRAINING
PROJECT #263-0114
PROJECT PAPER - GSLT

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GSLT TRAINING CENTER TECHNICAL DATA

(a) Occupation/Trades
(b) Courses
(c) Programs
(d) Physical Facility
(e) Instructors
(f) Staff
(g) Participant Training Program
(h) Technical Assistance
(i) Equipment, Tools and Training Aids

ANNEX 10 (a)

VEHICLE MAINTENANCE TRAINING
Project #263-0114
Project Paper - GSLT

OCCUPATION/TRADES

OCCUPATION/TRADE AREAS IN WHICH GSLT WILL OFFER TRAINING

NOTE: Occupation/Trade codes (O/T 1, O/T 2.... .....O/T 22) established in this section are used throughout Annex 9

OCCUPATION/TRADE AREAS IN WHICH GSLT WILL OFFER TRAINING

Occupation/Trade	(Number Per Year at Full Capacity)
O/T 1. Preventive Maintenance Mechanic	(60)
O/T 2. Diesel Engine Mechanic	(20)
O/T 3. Power Train Mechanic (transmissions, differentials, etc.)	(20)
O/T 4. Automotive Electrician	(40)
O/T 5. Front-End Alignment Mechanic	(20)
O/T 6. Fuel Injection Mechanic	(20)
O/T 7. Fluid Power Mechanic (hydraulics)	(20)
O/T 8. Brake Mechanic	(20)
O/T 9. Road Service Mechanic	(20)
O/T 10. Air-Conditioning Mechanic (automotive)	(20)
O/T 11. Cooling System Mechanic (radiator and cooler repair)	(20)
O/T 12. Body/Fender Mechanic	(20)
O/T 13. Sheetmetal Mechanic	(20)
O/T 14. Automotive Machinist	(60)
O/T 15. Welder	(20)
O/T 16. Blacksmith	(20)
O/T 17. Partsman/Expediter	(60)
O/T 18. Toolroom Man	(20)
O/T 19. Upholstery (deleted)	(0)
O/T 20. Dynamometer Man	(20)
O/T 21. Tire Repair Man (deleted)	(0)
O/T 22. Steering System Mechanic	(20)
TOTAL	(540)

Note that O/T 19 and O/T 22 were judged to be of relatively low priority and have been deleted due to lack of space at the GSLT facility. Were the facility expanded, training could be offered in these areas also.

The full capacity numbers given above were derived based on

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the assumption that the GSLT will train at least one complete class, 20 workers, in each Occupation/Trade area each year. In fact, the project design allows for operational flexibility in terms of numbers trained within given areas. In coming years, the GSLT can adjust its training mix in response to changes in tl demands for various types of workers.

Brief descriptions of the occupational duties associated with ea Occupation/Trade are found below.

1. PREVENTIVE MAINTENANCE MECHANIC

A preventive maintenance mechanic must have a thorough working and knowledge of scheduled maintenance service and perform the following duties in a clean and safe manner:

(a) Greases the vehicle completely

(b) Change the engine oil and filters or add proper oil

(c) Adjust the clutch

(d) Change the transmission oil or add the proper oil

(e) Change the differential oil or add the proper oil

(f) Fill the radiator and adjust the fan belts

(g) Service the battery (water level loose or corroded cable)

(h) Inspect and adjust the brakes (add fluid if hydraulic brakes)

(i) Inspect tires for proper inflation and wear

(j) Inspect the electrical wiring for loose or bare wires (repair if needed)

(k) Report major problems to the proper department

(l) Keep records of service performed and any major repairs need and give to his foreman

O/T2. DIESEL ENGINE MECHANIC

A diesel engine mechanic must have a thorugh working knowledge of the diesel engine and perform the following duties in a clean and safe manner:

(a) Perform all the duties of the preventive maintenance mechanic

(b) Use all the hand and power tools necessary to overhaul the engine

(c) Make all the necessary measurements required to determine wear,

(d) Disassemble the complete engine

(e) Rebuild the cylinder heads

(f) Remove and replace the pistons, rings, rods,

(g) Assemble the complete engine

(h) Torque all capscrews that require torquing

(i) Remove and replace the fuel injection pump

(j) Remove and replace the fuel injectors

(k) Remove and replace the generator/alternator

(l) Remove and replace the fan belts

(m) Trouble shoot and make on the spot adjustments or repairs

(n) Test engine on the dynamometer

O/T3. POWER TRAIN MECHANIC:

A power train mechanic must have a thorough working knowledge of the clutch, transmission, propellor-shaft, differental, and axle and perform the following duties in a clean and safe manner:

(a) Perform all the duties of the preventive maintenance mechanic

(b) Remove and replace the clutch / overhaul

(c) Remove and replace the transmission/overhau

(d) Remove and replace the differental/overhaul

(e) Remove and replace the propellor-shaft

(f) Remove and replace the U-joints

(g) Remove and replace the axles

(h) Test and trouble-shoot the transmission (automatic)

(i) Use all the tools necessary properly

(j) Use all test equipment necessary properly

(k) Make all the necessary adjustments and measurements

(l) Determine what parts are serviceable

O/T4. AUTOMOTIVE ELECTRICIAN

A automotive electrician must have a thorough working knowledge of automotive electricity and perform the following duties in a clean and safe manner:

(a) Perform all the duties of the preventive maintenance mechan.

(b) Disassemble all the electrical components

(c) Assemble all the electrical components

(d) use all the tools required properly

(e) Test the components

(f) Use all the test equipment properly

(g) Make all measurements and adjustments

(h) Trouble-shoot the electrical system

(i) Make on the spot repairs

(j) Remove and replace all the components

(k) Determine what parts are serviceable

O/T FRONT-END ALIGMENT MECHANIC

A Front-end mechanic must have a thorough working knowledge of of the steering system and the principles of wheel alignment. and perform the following duties in a clean and safe manner:

a) Perform all the duties of preventive maintenance mechanic and the steering systems mechanic

(b) Adjust the caster/camber

(c) Use the alignment equipment properly

(d) Balance tires and wheels

(e) Determine the cause of abnormal tire wear

(f) Remove and replace steering parts

(g) Remove and replace shock absorbers

(h) Determine what parts are serviceable

(i) Make all necessary measurements and adjustments

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O/T

FUEL INJECTION MECHANIC

A fuel injection mechanic must have a thorough working knowledge of the diesel engine and fuel system and perform the following duties in a clean and safe manner:

(a) Perform all the duties of the preventive maintenance mechanic and the diesel engine mechanic

(b) Disassemble the fuel injection pump and injectors

(c) Inspect the internal parts for wear

(d) Make all necessary measurements and adjustments

(e) Assemble the fuel injection pump and injectors

(f) Flow test the pump and make all necessary adjustments

(g) Pressure test the injectors

(h) Use all tools and equipment necessary properly

(i) Trouble-shoot the fuel system

(j) Make on the spot repairs or adjustments

133 6|T 7 FLUID POWER MECHANIC

A fluid power mechanic must have a thorough working knowledge of hydraulics and components operation and perform the following duties in a clean and safe manner:

(a) Perform all the duties of the preventive maintenance mechanic

(b) Disassemble all the system components

(c) Use all the tools required properly

(d) Assemble all components

(e) Test all components

(f) Make all necessary measurements and adjustments

(g) Determine what parts are serviceable

(h) Remove and replace all components

(i) Trouble-shoot the system

(j) Make on the spot repairs and adjustments

O/1 BRAKE MECHANIC

A brake mechanic must have a thorough working knowledge of the braking system (air and hydraulic) and perform the following duties in a clean and safe manner:

(a) All the duties of the preventive maintenance mechanic

(b) Use all the hand and shop tools necessary

(c) Reline brake shoes

(d) Remove and replace the brake shoes

(e) Remove and replace the wheel cylinders

(f) Determine what parts are serviceable

(g) Trouble-shoot the brake system

(h) Make on the spot repairs and adjustments

(i) Make all necessary measurements

(j) Remove and replace all components on air brake system

(k) Overhaul all components of the air brake system

O/T 9. ROAD SERVICE MECHANIC

The road service mechanic must have a thorough working knowledge of the complete vehicle and it's components and perform the following duties in a clean and safe manner:

(a) All the duties of the preventive maintenance mechanic

(b) All the duties of the diesel engine mechanic

(c) All the duties of the power train mechanic

(d) Trouble-shoot the electrical system and replace components

(e) Trouble-shoot and replace/repair steering system components

(f) Trouble-shoot and repair/replace hydraulic components

(g) Trouble-shoot and repair/replace brake system components

(h) Weld broken metal parts

(i) Operate a tow truck properly and safely

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O/T 10. AIR CONDITIONING MECHANIC

The air conditioning mechanic must have a thorough working knowledge of of the automotive air conditioning system and perform the following duties in a clean and safe manner:

(a) All the duties of the preventive maintenance mechanic

(b) Use all the necessary hand tools properly

(c) Use all test equipment necessary properly

(d) Remove and replace air conditioning components

(e) Rebuild the air conditioning components (except coolers)

(f) Determine what parts are serviceable

(g) Trouble-shoot the system

(h) Make on the spot repairs

(i) Charge the system properly

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OJT 11. COOLING SYSTEM MECHANIC

A cooling system mechanic must have a thorough working knowledge of the cooling system operation and perform the following duties in a clean and safe manner:

(a) All the duties of the preventive maintenance mechanic

(b) Use gas welding equipment properly

(c) Use all the hand and shop tools properly

(d) Weld top and bottom tanks of the radiator

(e) Repair oil coolers

(f) Repair heat exchangers

(g) Test components for leaks

(h) Make on the spot repairs

(i) Detremine what parts are serviceable

(j) Trouble-shoot the cooling system

D/T 2. BODY/FENDER MECHANIC

A body/fender mechanic must have a thorough working knowledge of body repair and frame repair procedures, and perform the following duties in a clean and safe manner:

(a) All the duties of the prentive maintenance mechanic

(b) All the duties of the welder

(c) Use all the hand, power, and shop tools used in body and frame repair

(d) Use all the measuring and aligning tools required properly

(e) Repair minor and major dents in the body of the vehicle

(f) Replace doors, fenders, deck lids and align them properly

(g) Replace broken glass properly

(h) Repair twisted or broken frames properly

(i) Prepare the body surfaces for painting

(j) Paint the entire vehicle or do spot painting

M

O/T 13. SHEETMETAL MECHANIC

A sheetmetal mechanic must have a thorough working knowledge of the types and gages of sheetmetal products. Understand layout procedures and reference lines and perform the following duties in a clean and safe manner:

(a) All the duties of the preventive maintenance mechanic

(b) All the duties of the welder

(c) Select the proper gage and type of sheetmetal to be used

(d) Mark dimensions and reference lines

(e) Cut and bend sheetmetal

(f) Shape sheetmetal on an anvil

(g) Use all hand and power tools properly

(H) Use all measuring tools properly

(i) Read and understand blueprints

(j) Be capable of setting up and operating all the machines found in the sheetmetal shop properly

O/T 14. AUTOMOTIVE MACHINIST

An automotive machinist must have a thorough working knowledge of machine shop procedures and be capabale of operating all the machines found in the automotive machine shop and perform the following duties in a clean and safe manner:

(a) All the duties of the preventive maintenance mechanic

(b) Use all the hand tools required properly

(c) Operate all the machines properly

(d) Use all the measuring equipment properly

(e) Manufacture new parts

(f) Repair worn parts

(g) Use magnuflux test equipment properly

O/T15. WELDER

A welder must have a thorough working knowledge of welding procedures both gas and electric arc and perform the following duties in a clean and safe manner.

(a) All the duties of the preventive maintenance mechanic

(b) Use all hand tools properly

(c) Use all power tools properly

(d) Use arc welding equipment properly

(e) Use gas welding equipment properly

(f) Use all measuring equipment properly

(g) Cut metal with a gas cutting torch properly

(h) Cut metal with a carbon arc properly

(i) Repair cracks and broken parts with gas and electric welding

(j) Read blueprints correctly

(k) Layout work properly

(l) Determine the proper welding procedure required

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OT 16. BLACKSMITH

A blacksmith must have a thorough working knowledge of metalurgy and forges and prform the following dutied in a clean and safe manner:

(a) All the duties of the preventive maintenance mechanic

(b) All the duties of the welder

(c) Use all hand and power tools properly

(d) Use all shop equipment properly

(e) Use all measuring equipment properly

(f) Forge and repair tools

(g) Heat metal stock in a forge and hammer to size and shape

(h) Use an anvil properly

(i) Forge-weld metal parts

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OT17. PARTSROOM MAN/Expediter

A partsroom man must have a thorough knowledge of receiving, storing, and issuing parts, equipment and supplies and perform the following duties in a clean and safe manner:

(a) Perform all of the duties of the preventive maintenance mechanic.

(b) Use all hand, power, and measuring tools.

(c) Count, sort, and weigh incoming stock.

(d) Compiles stock records.

(e) Examines incoming stock and rejects damaged or defective parts.

(f) Stores parts according to size, number, type or style.

(g) Fills orders and issues parts and supplies.

(h) Prepares periodic, special or perpetual inventory records.

(i) Reorders parts and supplies to adjust inventory levels.

(j) Determine proper methods of storage, identification and stock locations, considering temperature, humidity, height, and weight limits, turnover, floor loading capacity and required space.

O/T 18. TOOLROOM MAN

A toolroom man must have a thorough working knowledge of tools, hardware, and measuring tools and perform the following duties in a clean and safe manner:

(a) Perform all the duties of the preventive maintenance mechanic.

(b) Use all hand tools and power tools

(c) Use all measuring tools

(d) Receive tools, stores, and hardware.

(e) Issue hand tools, power tools, machine tools, and dies.

(f) Issue measuring tools, and measuring devices.

(g) Keeps record of issued and returned items.

(h) Searches for lost or misplaced tools.

(i) Prepares inventory to replenish common hardware stock.

(j) Unpacks and stores new tools and equipment.

(k) Marks all tools and equipment for inventory control.

(l) Inspects tools and equipment for wear.

(m) Reports damaged or defective tools so that they may be replaced.

(n) Clean and protect tools while stored.

(o) Make minor tool repairs.

0/T19. UPHOLSTER

A upholster must have a thorough working knowledge of basic seat construction and covering and perform the following duties in a clean and safe manner;

(a) Perform all the duties of the preventive maintenance mechanic.

(b) Use hand and power tools required to accomplish his task.

(c) Make all necessary mearsurements that are required.

(d) Repairs or replaces upholstery in vehicles.

(e) Remove old upholstery from seats.

(f) Measure new padding and cover material.

(g) Cut them to required dimensions.

(h) Adjust or replace springs.

(i) Tie them in place.

(j) Sew cover material together.

(k) Use sewing machine.

(l) Fits covering to seat frame.

(m) Secures it with glue, tacks, or staples.

(n) Refurbishes interiors of buses replacing cushions, drapes, and floor coverings.

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O/T 20. DYNAMOMETER MAN

A dyno. man must have a thorough working knowledge of the diesel engine and dynamometer engine test procedures. He must perform the following duties in a clean and safe manner:

(a) All the duties of the preventive maintenance mechanic

(b) All the duties of the diesel engine mechanic

(c) Operate the dynamometer properly

(d) Interpet the test results

(e) Check the engine for proper operation and torque specifications

(f) Check the engine for leaks and repair if necessary

(g) Make any necessary adjustments required to insure the engine is at peak operating capability

(h) Prepare performance sheets on each engine tested

O/T 21. TIRE REPAIRMAN

A tire repairman must have a thorough working knowledge of tire care and maintenance and perform the following duties in a clean and safe manner:

(a) Perform all the duties of the preventive maintenance mechanic.

(b) Use all the necessary hand and power tools to repair the tire.

(c) Make all necessary measurements required to determine wear.

(d) Disassemble the tire completely.

(e) Make necessary repairs to the tube.

(f) Determine reusability of the tire.

(g) Check rim,locking ring for reuse.

(h) Test tube for leaks.

(i) Assemble tire,tube,on the wheel or rim.

(j) Install proper amount of air pressure.

(k) Be familiar with different tire sizes.

(l) Install mounted tire on unit.

9/22. STEERING SYSTEM MECHANIC

A steering system mechanic must have a thorough working knowledge of basic hydraulics and steering systems and perform the following duties in a clean and safe manner:

(a) Perform all the duties of the preventive maintenance mechanic.

(b) Use all the hand and power tools to overhaul the steering system

(c) Make all the necessary measurements required to determine wear.

(d) Disassemble the steering system completely.

(e) (Rebuild) the power steering pump.

(f) (Rebuild) the steering gear case.

(g) Adjust the pitman arm and tie rods.

(h) (Rebuild) power steering cylinders and valves.

(i) Trouble-shoot and test steering systems.

(j) Determine what parts are serviceable.

ANNEX 10 (b)

VEHICLE MAINTENANCE TRAINING
Project #263-0114
Project Paper - GSLT

COURSES

COURSES REQUIRED TO TRAIN WORKERS IN THE OCCUPATION/ TRADE AREAS IDENTIFIED IN ANNEX 10 (a)

NOTE: Course codes (C-1, C-2, ... C-26) established in this section are used throughout Annex 10.

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COURSES TO BE OFFERED AT GSLT TRAINING CENTER

	COURSE	COURSE HOURS TOTAL	THEORY	SHOP
C-1	The Training Center	48	48	0
C-2	Shop Procedures	48	40	8
C-3	Automotive Tools/Equipment	48	40	8
C-4	Preventive Maintenance	96	48	48
C-5	Diesel Engine	288	96	192
C-6	Electrical Systems (Basic)	96	48	48
C-7	Electrical System (Speciality)	288	96	192
C-8	Transmission/Differential	288	96	192
C-9	Steering Systems	96	48	48
C-10	Wheel Alignment	288	96	192
C-11	Diesel Fuel Injection	288	96	192
C-12	Basic Hydraulics	96	48	48
C-13	Hydraulics (Speciality)	288	96	192
C-14	Automotive Brakes (Speciality)	288	96	192
C-15	Gas and Electric Arc Welding	288	96	192
C-16	Emergency Road Service	96	48	48
C-17	Automotive Machine Shop	288	96	192
C-18	Automotive Sheetmetal (Speciality)	288	96	192
C-19	Blacksmithing (Speciality)	288	96	192
C-20	Automotive Metal Shop (Speciality)	288	96	192
C-21	Automotive Radiator Repair	96	48	48
C-22	Upholstery (deleted)	-	-	-
C-23	Automotive Air Conditioning	288	96	192
C-24	Supply Room Procedures	48	40	8
C-25	Supervision	96	96	0
C-26	Tire Repair (deleted)	-	-	-

Brief course outlines are found below.

C-1 INTRODUCTION TO THE TRAINING CENTER

(a) Safety
(b) Rules and regulations
(c) Enrollment forms
(d) Basic Technical English

C-2 INTRODUCTION TO SHOP PROCEDURES

(a) Safety
(b) Shop organization
(c) Shop cleanliness

C-3 INTRODUCTION TO AUTOMOTIVE TOOLS AND EQUIPMENT

(a) Safety and proper use
(b) Measuring tools
(c) Hand tools
(d) Power tools
(e) Shop equipment

C-4 INTRODUCTION TO AUTOMOTIVE PREVENTIVE MAINTENANCE

(a) Safety
(b) Scheduled service and inspection

(1) Chassie
(2) Engine
(3) Cooling system (air and fluid)
(4) Clutch
(5) Transmission and drive-line
(6) Differential and axle
(7) Brakes (air and hydraulic
(8) Electrical system
(9) Steering (conventional and power)
(10) Tires and wheels

C-5 INTRODUCTION TO THE DIESEL ENGINE

(a) Safety
(b) Basic designs
(c) Theory of operation (two and four cycle)
(d) Engine components (identification and purpose)
(e) Cooling systems (air and fluid cooled)
(f) Lubricating systems
(g) Fuel systems (basic)
(h) Electrical systems
(i) Intake and exhaust systems
(j) Service procedures (all components)

C-6 INTRODUCTION TO ELECTRICAL SYSTEMS (BASIC)

(a) Safety
(b) Theory (basic automotive electrical)
(c) Generator (Operation and purpose)
(d) Alternator (operation and purpose)
(e) Regulator (operation and purpose)
(f) Batteries (operation and purpose)
(g) Wiring
(h) Trouble-shooting and testing
(i) Service procedures

C-7 ELECTRICAL SYSTEMS COMPONENTS REPAIR (SPECIALIST)

(a) Safety
(b) Theory (advanced)
(c) Disassembly and assembly (all components)
(d) Bench testing components
(e) System trouble-shooting

C-8 INTRODUCTION TO TRANSMISSIONS,DIFFERENTIALS, AXLES (SPECIALIST)

(a) Safety
(b) Clutches (operation and purpose)
(c) Standard transmission (operation and purpose)
(d) Automatic transmission (operation and purpose)
(e) U-JOINTS and Drive-line (operation and purpose)
(f) Differential (types, operation and purpose)
(g) Axles (types, operation and purpose)
(h) Overhaul procedures
(i) Trouble-shooting and testing

C-9 INTRODUCTION TO STEERING SYSTEMS

(a) Safety
(b) Conventional Steering (operation and purpose)
(c) Power Steering (operation and purpose
(d) Overhaul procedures
(e) Trouble-shooting and testing

C-10 INTRODUCTION TO WHEEL ALIGNMENT (SPECIALIST)

(a) Safety
(b) Alignment principles
(c) Caster/camber
(d) Sheel balancing
(e) Service procedures

C-11 INTRODUCTION TO DIESEL FUEL INJECTION SYSTEMS (SPECIALIST)

(a) Safety
(b) Theory (Advanced)
(c) Disassembly and assembly
(d) Flow testing and calibration
(e) System trouble-shooting

C-12 INTRODUCTION TO BASIC HYDRAULICS

(a) Safety
(b) Theory of operation (Basic)
(c) Testing procedures
(d) Component replacement procedures

C-13 INTRODUCTION TO HYDRAULIC COMPONENTS REPAIR (SPECIALIST)

(a) Safety
(b) Theory of operation (Advanced)
(c) Disassembly and assembly (all components)
(d) Pressure and flow testing
(e) Trouble-shooting

C-14 INTRODUCTION TO THE AUTOMOTIVE BRAKE SHOP (SPECIALIST)

(a) Safety
(b) Brake system designs and types
(c) Construction
(d) Hand tools
(e) Shop tools
(f) Component repair procedures

C-15 INTRODUCTION TO WELDING, GAS AND ELECTRIC ARC (SPECIALIST)

(a) Safety
(b) Welding theory
(c) Welding procedures
(d) Tools and equipment
(e) Cutting
(f) Brazing

C-16 INTRODUCTION TO EMERGENCY ROAD SERVICE (SPECIALIST)

(a) Safety
(b) Operation of tow truck
(c) Road service procedures

C-17 INTRODUCTION TO THE AUTOMOTIVE MACHINE SHOP (SPECIALIST)

(a) Safety
(b) Measuring tools
(c) Hand tools
(d) Shop tools
(e) Shop procedures
(f) Tooling
(g) Machinery (operation and care)

C-18 INTRODUCTION TO THE AUTOMOTIVE SHEET METAL SHOP (SPECIALIST)

(a) Safety
(b) Theory (planning and layout)
(c) Jigs and fixtures
(d) Tools
(e) Machinery (operation and care)

C-19 INTRODUCTION TO THE BLACKSMITH'S SHOP (SPECIALIST)

(a) Safety
(b) Theory
(c) Metalurgy (basic)
(d) Tools
(e) Shop equipment

C-20 INTRODUCTION TO THE AUTOMOTIVE METAL SHOP (SPECIALIST)

(a) Safety
(b) Theory
(c) Hand tools
(d) Power and shop tools
(e) Body repairing
(f) Frame straightening
(g) Glass replacement
(h) Painting
(i) Repair procedures

C-21 INTRODUCTION TO THE AUTOMOTIVE RADIATOR REPAIR SHOP (SPECIALIST)

(a) Safety
(b) Hand and shop tools
(c) Repair procedures
(d) Testing

C-22 INTRODUCTION TO THE UPHOLSTERY SHOP (SPECIALIST)

(a) Safety
(b) Hand and shop tools
(c) Fabricating
(d) Mending

C-23 INTRODUCTION TO AUTOMOTIVE AIR CONDITIONING REPAIR (SPECIALIST)

(a) Safety
(b) Theory of operation
(c) Hand and shop tools
(d) Testing procedures
(e) Repair procedures
(f) Charging the system

C-24 INTRODUCTION TO SUPPLY ROOM PROCEDURES (SPECIALIST)

(a) Safety
(b) Proper parts handling
(c) Proper parts storing
(d) Parts cataloguing
(e) Parts counter service
(f) Inventory control
(g) Parts manuals

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C-25 INTRODUCTION TO SUPERVISION

(a) Safety
(b) Shop organization and operation

(1) Shop manager
(2) Shop foreman
(3) Shop leadman
(4) Parts room manager
(5) Parts room foremen

C-26 INTRODUCTION TO TIRE REPAIR (SPECIALIST)

(a) Safety
(b) Tools
(c) Tire construction
(d) Rim construction
(e) Proper pressures
(f) Power equipment
(g) Dismounting and mounting
(h) Wheel removal procedures

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ANNEX 10(c)

VEHICLE MAINTENANCE TRAINING
PROJECT #263-0114
PROJECT PAPER - GSLT

PROGRAMS

PROGRAMS (SEQUENCE OF COURSES)
REQUIRED TO TRAIN WORKERS IN
EACH OF THE OCCUPATION/TRADE
AREAS IDENTIFIED IN ANNEX 10(c)

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TRAINING PROGRAM REQUIRED FOR EACH OCCUPATION/TRADE

OCCUPATION/TRADE (Courses)	PROGRAM HOURS Total	Theory	Shop
O/T 1 Preventive Maintenance (C-1,2,3,4,)------	240	176	64
O/T 2 Diesel Engine Mechanic (C-1,2,3,4,5,)----	528	288	240
O/T 3 Power Train Mechanic (C-1,2,3,4,8,12,)---	624	336	288
O/T 4 Automative Electrician (C-1,2,3,4,6,7,) --	624	336	288
O/T 5 Front End Mechanic (C-1,2,3,4,9,10,) ----	624	336	288
O/T 6 Fuel Injection Mechanic (C-1,2,3,4,5,11,)-	816	384	432
O/T 7 Fluid Power Mechanic (C-1,2,3,4,12,13,)--	624	336	288
O/T 8 Brake Mechanic (C-1,2,3,4,14) ----------	528	288	240
O/T 9 Road Service Mechanic (C-1,2,3,4,5,6,8,9, 12,14,15,16,) ----------	1776	768	1008
O/T 10 Air Conditioning Mechanic (C-1,2,3,4,23,)-	528	288	240
O/T 11 Cooling System Mechanic (C-1,2,3,4,15a,21,)	432	288	144
O/T 12 Body/Fender Mechanic (C-1,2,3,4,15,20,)---	816	384	432
O/T 13 Sheetmetal Mechanic (C-1,2,3,4,15,18,)----	816	384	432
O/T 14 Automative Machinist (C-1,2,3,4,17,)------	528	288	240
O/T 15 Welder (C-1,2,3,4,15,) ----------	528	288	240
O/T 16 Blacksmith (C-1,2,3,4,15,19,) ----------	816	384	432
O/T 17 Partsman/Expediter (C-1,2,3,4,24,) -------	240	240	0
O/T 18 Toolroom Man (C-1,2,3,4,) ----------	192	192	0
O/T 19 Upholstry (deleted) ----------			
O/T 20 Dynameter Man (C-1,2,3,4,5)	528	288	240
O/T 21 Tire Repair Man (deleted)----------			
O/T 22 Steering System Mechanic (C-1,2,3,4,12,9)-	432	288	144

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FURNITURE

UNIT	NAME	UNIT PRICE	TOTAL $
3 ea.	Executive chairs	123.00	369.00
3 ea.	Executive desk	213.00	639.00
30 ea.	Teachers chairs	76.50	2,295.00
30 ea.	Teachers desk	166.85	5,005.50
20 ea.	File cabinets	151.65	2,033.00
200 ea.	Students W/arm desk foldable	26.95	5,390.00
8 ea.	Movable chair racks	61.80	494.40
150 ea.	Chair (for auditorium/hall)	20.00	3,000.00
1 ea.	Modular work station (for info. sta.)	463.35	463.35
30 ea.	Wall clocks(battery operated)	27.55	826.50
16 ea.	Shelving units (library)	439.15	7,026.40
2 ea.	Table	495.85	991.70
12 ea.	Trophy cases (for displays)	495.00	5,940.00
2 ea.	Copy machines	141.00	282.00
2 ea.	Copy machine stand	69.00	138.00
6 ea.	Electric typewriters	1,100.00	6,600.00
4 ea.	Typing table	94.85	379.40
10 ea.	Folding table	130.70	1,307.00
144 ea.	Boxes of white chalk	3.00	432.00
50 ea.	Erasers	.69	34.50
	Misc. office supplies		10,000.00
	Window shades for the classrooms	10.00	200.00
	Public adress system		5,000.00
2 ea.	Magazine rack BG 471669 (for reception)	129.00	258.00

TOTAL $59,104.75*

3 INTRODUCTION TO AUTOMOTIVE TOOLS

CLASSROOM

COST ANALYSIS

1. SHOP EQUIPMENT (NONE)

2. HAND TOOLS (NONE)

3. DISPLAY EQUIPMENT----------$ 2,155.00

4. FILMS, TRANSPARENCIES, BOOKLETS---------$ 1,403.00

5. MISC SUPPLIES----------$ 500.00

TOTAL------$ 4,058.00*

AUTOMOTIVE TOOLS/EQUIPMENT

CLASSROOM

INSTRUCTIONAL MATERIAL

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	English/Metric measurement course BG 133094	2,095.00	2,095.00
20 ea.	Metric/English metre sticks BG 191009	3.00	60.00
	Total		2,155.00

TRANSPARENCIES

1 ea.	Sheetmetal hand tools complete set BG 124649	86.00	86.00
1 ea.	Power tools complete set BG 343880	56.00	56.00
1 ea.	Safety (general rules in the shop) BG 449629	136.00	136.00
1 ea.	Power tool maintenance complete set BG 348035	102.00	102.00
1 ea.	Auto body tools complete set BG 119116	149.00	149.00
1 ea.	Sheetmetal basics BG 124404	114.00	114.00

BOOKLETS

20 ea.	Understanding and measuring horse power BG 119361	4.00	80.00
20 ea.	Selecting and storing fuels/lubricants BG 119394	4.00	80.00

16MM SOUND COLOR FILMS

1 ea.	How to use measuring tools BG 489974	150.00	150.00
1 ea.	How to use saws BG 49005	150.00	150.00
1 ea.	How to use hammers BG 490435	150.00	150.00
1 ea.	How to use chisels BG 490636	150.00	150.00
	Total		1,403.00

4 PREVENTIVE MAINTENANCE COURSE

COST ANALYSIS

1. SHOP EQUIPMENT AND HAND TOOLS----------$24,040.00

2. FILMS AND BOOKS----------$ 228.50

3. MISC. SUPPLIES----------$ 500.00

Total: $24,768.50*

4 PREVENTIVE MAINTENANCE COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Lincoln heavy duty shop lubrication system (see Brodhead Garrett cat. pages 612/613)		6,989.00*
5 ea.	Drip pan BG 400913	3.00	30.00
5 ea.	Drip pan BG 400924	2.00	10.00
5 ea.	Drip pan BG 400935	7.00	35.00
5 ea.	Drip pan Bg 400946	3.00	15.00
2 ea.	Portable waste oil drain (for pit)	159.00	318.00
5 ea,	Grease gun lever type BG 132604	10.00	50.00
5 ea.	Oiler BG 192710	5.00	25.00
5 ea.	Transmission funnel BG 165362	3.00	15.00
2 ea.	Barrel pump BG 165395	18.00	36.00
4 ea.	Hydraulic jack 5 ton cap. BG 191612	48.00	192.00
2 ea,	Parts washing tank BG 134517	230.00	460.00
2 ea.	Work bench	480.00	960.00
2 ea.	Metric wrench set BG 313801	206.00	412.00
2 ea.	Tool sets BG 413688	206.00	412.00
2 ea.	Lubrication charts	5.00	10.00
1 ea.	Parts dip hot tank 8'x4	1,000.00*	1,000.00*
1 ea.	100 gallons solution		150.00*
1 ea.	Steam cleaner L-P fired BG 442081	1,825.00	1,825.00
1 ea.	Soap for steam cleaner 500 gallons	1.00*	500.00
2 ea.	Air compressor	4,000.00	8,000.00
2 ea.	3/4" dr.socket set BG 394292	183.00	366.00
20 ea.	Safety glasses	4.00	80.00
1 ea.	Grinder/Buffer	150.00	150.00
1 ea.	1"dr. impact wrench/sockets (air)	2,000.00	2,000.00
			24,040.00

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4 PREVENTIVE MAINTENANCE COURSE

INSTRUCTIONAL MATERIAL

UNIT	NAME	UNIT PRICE	TOTAL $
	35 MM SLIDES		
1 ea.	Fuels, lubricants, coolants BG 393667	21.95	21.95
1 ea.	Illustration booklet BG 393636	3.25	3.25
1 ea.	Preventive maintenance slide set BG 142910	96.00	96.00
1 ea.	Text book BG 159199	7.95	7.95
1 ea.	Instructors booklet BG 142997	17.95	17.95
	DCA FILMSTRIPS		
1 ea.	The battery BG 122877	81.40	81.40
	Total		228.50

5 DIESEL ENGINE COURSE

COST ANALYSIS

1. SHOP EQUIPMENT----------$ 39,382.00*

2. HAND TOOLS----------$ 32,227.00*

3. DISPLAY MODELS----------$ 5,076.00*

4. FILMS, SLIDES, TRANSPARENCIES, BOOKLETS----------$ 3,711.00*

5. DYNAMOMETER (mounted outside of shop)----------$ 20,000.00*

6. MISC. SUPPLIES----------$ 500.00

Total $100,896.00*

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5 DIESEL ENGINE COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Arbor press 12 ton	1,700.00	1,700.00
1 ea.	Arbor press 2 ton	420.00	420.00
1 ea.	Engine test stand Bg 187243	300.00	300.00
2 ea.	parts washer BG 134517	230.00	460.00
10 ea.	Engine repair stand BG 186156	1,195.00	11,950.00
10 ea.	Adapter plates BG 493593	192.00	1,920.00
10 ea.	Adapter plates BG 190189	251.00	2,510.00
10 ea.	Engine parts rack (build in Egypt)	200.00*	2,000.00
10 ea.	Work bench	480.00	4,800.00
10 ea.	Vise BG 224234	120.00	1,200.00
1 ea.	Storage cabinet (tool)	740.00	740.00
2 ea.	Chain hoist 2 ton electric	1,000.00	2,000.00
2 ea.	Glider trolley 2 ton	150.00	300.00
2 ea.	Valve grinder set BG 159674	2,340.00	4,680.00
2 ea.	Valve guide remover set BG 431440	145.00	290.00
2 ea.	Grinding wheel set BG 341430	40.00	80.00
5 ea.	Valve spring compressor BG 425752	30.00	150.00
10 ea.	Parts basket "small" (build in Egypt)	20.00*	200.00*
10 ea.	Parts basket "large" build in Egypt)	100.00*	000.00*
10 ea.	Drop lite reel	35.00	350.00
2 ea.	Grinder/buffer with spare wheel/brush	180.00	360.00*
2 ea.	Pedestal for grinder/buffer	170.00	340.00
1 ea.	Drill press 15"	700.00	700.00
1 ea.	Drill press vise	68.00	68.00
2 ea.	Metric wall conversion chart	2.00	4.00
10 ea.	Air hose reel BG 473380	35.00	350.00
10 ea.	Quick coupling 1/4"pipe male/female	6.00	60.00

5 DIESEL ENGINE COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
10 ea.	Drip pann for engine stand (build in Egypt)	30.00*	300.00
2 ea.	Valve spring tester	75.00*	150.00
	Total		39,382.00

DIESEL MECHANICS SHOP
TOOLS

UNIT	NAME	UNIT PRICE	TOTAL $
4 ea	Micromemter set board Snap-On VEV-1036-K	500.	2,000.00*
5 ea.	Torque wrench 3/8" Drive 10-200 in.lbs.(micro-type)	62.	310.00*
5 ea.	Torque wrench 1/2" Drive 10-150 ft.lbs.(micro-type)	71.	355.00*
5 ea.	Torque wrench 3/4" Drive 10-600 ft.lbs.	150.	750.00*
2 ea.	Puller set BG 193249	305.	610.00
2 ea.	Puller set BG 193250	268.	536.00
2 ea.	Puller set BG 193260	217.	434.00
2 ea.	Puller 3 jaw BG 388772	50.	100.00
2 ea.	Bushing driver set BG 192805	32.	64.00
5 ea.	Socket set board snap-on VEV1005A-K	450.	2,250.00*
5 ea.	Valve Cleaning set Snap-On VEV-1026A-K	100.	500.00*
5 ea.	Cylinder service set Snap-On VEV-1033A-K	250.	1,250.00*
5 ea.	Punch/Chisel set Snap-On VEV-1008-K	150.	750.00*
5 ea.	Screwdriver set Snap-On VEV-1009A-K	120.	600.00*
5 ea.	Pliers set Snap-On VEV-1007-K	160.	800.00*
5 ea.	Hammer set Snap-On VEV-1023A-K	115.	575.00*
5 ea.	Wrench set combo. Snap-On VEV-1003A-K	250.	1,250.00*
5 ea.	Boxockets set Snap-On VEV-1006-K	275.	1,375.00*
5 ea.	Metric wrench set Snap-On VEV-1020A-K	325.	1,625.00*
5 ea.	Metric socket set Snap-On VEV-1021A-K	400.	2,000.00*
5 ea.	1/2" dr. rachet/handle set Snap-On VEV-1001-K	600.	3,000.00*
5 ea.	1/2" dr. socket set Snap-On VEV-1000-K	500.	2,500.00*
5 ea.	3/8" dr. tool set Snap-On VEV-1031A-K	475.	2,375.00*
15 ea.	A-Frame for tool boards Snap-On KRA-213A —	80.	1,200.00*
10 ea.	Impact wrench 1/2" dr. BG 134550	60.	600.00*
10 ea.	Impact accessories BG 390002	26.	260.00*
10 ea.	Impact extension BG 390024	6.	60.00*
2 ea.	Camshaft service set BG 497317	160.	320.00
2 ea.	Sleeve puller set BG 497299	140.	280.00
5 ea.	Drill index BG 011454	140.	700.00*
2 ea.	Tap & Die set BG 219020	208.	416.00*
2 ea.	Tap & Die Set Metric BG 219063	54.	108.00*

DIESEL MECHANICS SHOP
TOOLS

UNIT	NAME	UNIT PRICE	TOTAL $
4 ea.	Drill motor 3/8" with chuck key	75.	300.00*
4 ea.	Drill Motor 1/2" with chuck key	90.	360.00*
2 ea.	Pressure tester BG 186302	320	640.00
2 ea.	Compression tester BG 186335 (case)	23.	46.00
2 ea.	Compression tester BG 186324	60.	120.00
2 ea.	Adapters BG 186368 Detroit diesel	44.	88.00*
2 ea.	Adapters BG 190273 Cat.	46.	92.00*
10 ea.	Feeler gauge BG 401273	5.	50.00*
10 ea.	Adjustable wrench 10"	12.	120.00*
2 ea.	3/4" dr.socket set BG 394292	183.	366.00
2 ea.	Screw extractor set BG 218663	6.	12.00*
20. ea.	Safety glasses	4.	80.00
		Total	32,227.00*

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DIESEL CLASSROOM EQUIPMENT

INSTRUCTIONAL MATERIAL

DISPLAY MODELS

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Diesel sectional (four stroke) BG 411309	245.	245.00
1 ea.	Diesel engine four stroke four cycle with transmission cutaway BG 362393 (electric Oper.)	3,565.	3,565.00
1 ea.	Fuel injection pump cutaway BG 362327	695.	695.00
1 ea.	Diesel components display BG 362338	225.	225.00
1 ea.	Fuel injector cutaway BG 185482	143.	143.00
1 ea.	Oil cooler cutaway BG 185522	193.	193.00
1 ea.	Fuel filter cutaway	10.	10.00*
		Total $ 5,076.00*	

DIESEL CLASSROOM EQUIPMENT

WALL CHARTS

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Cooling system(Cat or Detroit)	5.	5.00
1 ea.	Fuel system(Cat or Detroit)	5.	5.00
1 ea.	Lubricating system(Cat or Detroit)	5.	5.00
1 ea.	Injection system(Cat or Detroit)	5.	5.00
1 ea.	Fuel injection pump(Cat or Detroit)	5.	5.00
1 ea.	Engine cross section(Cat or Detroit)	5.	5.00

16MM MOVIES

1 ea.	Basic diesel engine theory with booklets (Cat or Detroit)	400.	400.00
1 ea.	Diesel cooling system (Cat or Detroit)	278.	278.00

35MM SLIDES

1 ea.	Cooling system maintenance(CAt or Detroit)	114.	114.00
1 ea.	Air system maintenance(Cat or Detroit)	235.	235.00
1 ea.	Fuel system maintenance(Cat or Detroit)	134.	134.00
1 ea.	Lubricating system maintenance(Cat or Detroit)	125.	125.00
1 ea.	Diesel rebuild (Cat or Detroit)	590.	590.00
1 ea.	Engine block group(Cat or Detroit)	180.	180.00
1 ea.	Cranking circuit(Cat or Detroit)	180.	180.00
1 ea.	Intorduction to fuel systems(Cat or Detroit)	180.	180.00
1 ea.	Fuel system trouble shooting(Cat or Detroit)	180.	180.00
1 ea.	Preventive maintenance on the following (a) Air system (b) Fuel system (c) Cooling system (Cat or Detroit)	320.0	320.00
1 ea.	Bearings (Cat or Detroit)	28.	28.00
1 ea.	Injection test stand procedures (Bacharach)	75.	75.00
1 ea.	Fuel pump calibration(Cat)	100.	100.00
1 ea.	Pistons,liners, (Cat or Detroit)	28.	28.00
1 ea.	Head and valve repair(Cat or Detroit)	35.	35.00
1 ea.	Crankshafts (Cat or Detroit)	35.	35.00
1 ea.	Water pump repair (Cat or Detroit)	35.	35.00

DIESEL CLASSROOM

TRANSPARENCIES

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Compression/Displacement BG 363425	4.	4.00
1 ea.	Two stroke cycle BG 363458	5.05	5.05
1 ea.	Four stroke cycle BG 363470	5.05	5.05
1 ea.	Fuel injection BG 363491	5.05	5.05
1 ea.	Atomization BG 363509	4.00	4.00
1 ea.	Combustion cycle BG 363510	12.65	12.65
1 ea.	Open cooling system BG 363659	4.70	4.70
1 ea.	Closed cooling system BG 363660	5.35	5.35
1 ea.	Fuel system requirements BG 363692	4.00	4.00
1 ea.	Fuel pumps BG 363743	4.00	4.00
1 ea.	fuel filters BG363732	3.30	3.30
1 ea.	In-line and rotary pumps BG 363756	4.00	4.00

TOTAL $ 61.15

BOOKLETS

20 ea. Failure analysis (Cat or Detroit) $ 368.00

(a) Bearings (b) Pistons/liners (c) Steel parts fracture

Total $ 3,711.15

6-7 ELECTRICAL COURSE COST ANALYSIS

1. SHOP EQUIPMENT----------$ 19,629.52 *

2. HAND TOOLS----------$ 8,987.00*

3. DISPLAY MODELS----------$ 4,872.00*

4. FILMS, TRANSPARENCIES----------$ 384.50*

5. MISC. SUPPLIES----------$ 500.00

TOTAL $ 34,373.02*

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ELECTRICAL SHOP

EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Generator/alternator/regulator test stand.	4,395.00	4,395.00
1 ea.	Generator/alternator/regulator test bench	1,595.00	1,595.00
2 ea.	Battery/starter tester with stand	348.00	696.00
2 ea.	Charging/starting analyzer	100.00	200.00
5 ea.	Starter/generator current tester	5.00	25.00
2 ea.	Volt/amp/ohm analyzer	100.00	200.00
2 ea.	Growler	156.00	312.00
5 ea.	Starter switch (remote control)	12.00	60.00
1 ea.	Coil winding machine	3,300.00	3,300.00
1 ea.	Portable starting station	189.00	189.00
1 ea.	Battery charger (fast 6-12 Volt)	379.00	379.00
1 ea.	Battery charger(slow 50AMP 6-12Volt)	199.00	199.00
4 ea.	Automotive battery	50.00	200.00
2 ea.	Booster cables	30.00	60.00
1 ea.	Drying oven	300.00	300.00
24 ea.	Battery clips (3/8" jaw spread)	.17	4.08
24 ea.	Battery clips (5/8" jaw spread)	.31	7.44
2 ea.	Parts washer	215.00	430.00
5 ea.	Work bench 30"x6'	480.00	2,400.00
5 ea.	Vise	120.00	600.00
1 ea.	Arbor press 6 Ton	800.00	800.00
5 ea.	Hose reel (air)	35.00	175.00
5 ea.	Quick coupling air 1/4"pipe male	3.00	15.00
5 ea.	Quick coupling air 1/4"pipe female	3.00	15.00
5 ea.	Blow dry gun	5.00	25.00
5 ea.	Parts basket(build in Egypt) Small	20.00	100.00
1 ea.	Storage cabinet	740.00	740.00
5 ea.	Power outlet reel	30.00	150.00
2 ea.	Armature lathe	324.00	648.00
2 ea.	Grinder/Buffer pedcastal type	305.00	610.00
1 ea.	Drill press 15"	800.00	800.00

TOTAL $19,629.52

ELECTRICAL SHOP
HAND TOOLS

UNIT	NAME	UNIT PRICE	TOTAL $
20 ea.	Safety glasses	4.00	80.00
2 ea.	Torque wrench 3/8" dr. 10-200 ~~ft~~ in. lbs	62.00	124.00
1 ea.	Puller set	305.00	305.00
2 ea.	Bushing driver set	32.00	64.00
5 ea.	Metric wrench set Snap-On VEV-1020A-K	325.00	1,625.00*
5 ea.	Metric socket set Snap-On VEV-1021A-K	400.00	2,000.00*
5 ea.	Electric shop tool kit Snap-On VEV-1019B-K	300.00	1,500.00*
5 ea.	Power technicians set Snap-On VEV1017B-K	350.00	1,750.00*
5 ea.	A frame for tool boards Snap-On KRA-213A	80.00	400.00*
5 ea.	Impact wrench 1/2" dr.	60.00	300.00*
5 ea.	Impact accessories	26.00	130.00
1 ea.	Tap and die set BG 219020	208.00	208.00
1 ea.	Tap and die set metric BG219063	54.00	54.00
1 ea.	Drill index BG 011454	140.00	140.00
1 ea.	Drill motor 3/8" with chuck key	75.00	75.00
1 ea.	Drill motor 1/2" with chuck key	90.00	90.00
5 ea.	Feeler gauge BG 401273	5.00	25.00
5 ea.	adjustable wrench 10"	12.00	60.00
2 ea.	Screw extractor set BG218663	6.00	12.00
5 ea.	Hacksaw with blades	9.00	45.00*

TOTAL $8,987.00

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ELECTRICAL CLASSROOM

DISPLAY MODELS

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Automobile chassis complete with the following sectionized engine sectionized transmission sectionized differental sectionized wheels sectionized steering gear all electrical components electric motor driven	4,000.00*	4,000.00*
1 ea.	Automotive battery cutaway	100.00*	100.00*
1 ea.	Stater motor cutaway	300.00*	300.00*
1 ea.	Automotive generator	300.00*	300.00*
1 ea.	Automotive lighting board	172.00	172.00*
		TOTAL	$ 4,872.00*

SUPER 8 FILM LOOPS

1 ea.	Fundamentals of electricty	140.00	140.00
1 ea.	Magnetism	140.00	140.00
1 ea.	Battery/Starter Test	23.00	23.00
1 ea.	Alternators testing	23.00	23.00
1 ea.	Generator testing	23.00	23.00
		TOTAL	$ 349.00

TRANSPARENCIES

1 ea.	Ohms law	7.90	7.90
1 ea.	The bar magnet	7.00	7.00
1 ea.	The magnet field encircling a current	3.10	3.10
1 ea.	Magnet field about a current loop	4.80	4.80
1 ea.	Comparison of DC and AC power	6.35	6.35
1 ea.	The DC generator	6.35	6.35
		TOTAL	$ 35.50

8 TRANSMISSION/DIFFERENTAL SHOP

HAND TOOLS

UNIT	NAME	UNIT PRICE	TOTAL $
5 ea.	Torque wrench 3/8"dr.(10-200 in.lbs)	62.00	310.00
5 ea.	Torque wrench 1/2" dr.(10-250ft.lbs.)	71.00	355.00
1 ea.	Gear puller s	305.00	305.00
2 ea.	3 jaw puller	50.00	100.00
2 ea.	Bushing driver set	32.00	64.00
5 ea.	Tool set(power tech. Snap-On VEV-1017B-K)	400.00	2,000.00*
5 ea.	Metric socket set Snap-On VEV-1021A-K	400.00	2,000.00*
5 ea.	Metric wrench set Snap-On VEV-1020A-K	325.00	1,625.00*
4 ea.	A-Frame (for tool boards Snap-On KRA-213A	80.00	320.00*
5 ea.	Impact wrench 1/2"dr.	60.00	300.00*
5 ea.	Impact accessories	26.00	130.00*
2 ea.	Drill index BG 011454	140.00	280.00*
1 ea.	Tap/Die set BG 219020	208.00	208.00*
1 ea.	Tap/Die set Metric BG 219063	54.00	54.00*
1 ea.	Drill motor 1/2" with chuck key	90.00	90.00
1 ea.	Drill motor 3/8" with chuck key	75.00	75.00
2 ea.	Screw extractor set BG218663	6.00	12.00
1 ea.	3/4" dr. socket set BG 394292	183.00	183.00
5 ea.	Safety glasses	4.00	20.00
5 ea.	Vise grip pliers	7.00	35.00
5 ea.	Internal snap ring pliers	8.00	40.00
5 ea.	External snap ring pliers (small)	8.00	40.00
5 ea.	External snap ring pliers (large)	14.00	70.00
2 ea.	Dial indicator set	50.00	100.00
2 ea.	Micrometer set 0-1" 1-2" 2-3" 3-4"(outside)	120.00	240.00
2 ea.	inside/outside calipers	7.00	28.00
		TOTAL $	8,984.00*

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OTHER SUPPORT EQUIPMENT

COST ANALYSIS

1.	TOOL AND SUPPLY ROOM EQUIPMENT----------	$ 10,025.00
2.	CLEANING EQUIPMENT----------	$ 6,388.00
3.	FIRE EQUIPMENT----------	$ 4,550.00
4.	SAFETY EQUIPMENT----------	$ 3,687.00
5.	MISCELLANEOUS EQUIPMENT----------	$ 2,109.70
	TOTAL	$ 26,759.70
	SPARE PARTS FOR MACHINERY & EQUIPMENT	$ 142,730.00

TOOL AND SUPPLY ROOM EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
6 ea.	Tool room bins BG 403140	396.00	2,376.00
4 ea.	Tool room bins BG 403129	298.00	1,172.00
12 ea.	Metal shelving units BG 461260	119.00	1,428.00
30 ea.	Metal shelves BG 461344 (for above units)	8.50	255.00
12 ea.	Metal shelving unit (add on)	109.00	1,380.00
6 ea.	Metal shelving units BG 403045	103.00	618.00
6 ea.	Metal shelving unit BG 403056	112.00	672.00
6 ea.	Metal shelving unit BG 403078	148.00	888.00
6 ea.	Metal shelving unit BG 403090	206.00	1,236.00
	Total		$10,025.00*
	CLEANING EQUIPMENT		
6 ea.	Shop vacuum cleaners	389.00	2,388.00
	Janitorial supplies (classrooms, offices, shops)		4,000.00
	Total		$ 6,388.00*
	FIRE EQUIPMENT		
0 ea.	Fire extinguisher BG 406551	91.00	$4,550.00*
	SAFETY EQUIPMENT		
1000 ea.	Ear plugs (20 to a box) BG 159580	1.10	1,100.00
4 ea.	Lens cleaning station BG 261410 (safety glasses)	14.95	59.80
20 ea.	Cleaning tissues (boxes) BG 262088	5.45	109.00
4 ea.	First aid kit (for tool rooms) BG 261962	53.40	213.60
50 ea.	Waring panel for fire ex. BG 356142	2.85	142.50
50 ea.	Fire ex. sign BG 262943	1.25	62.50

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SAFETY EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
500 ea.	Pairs of safety glasses	4.00	2,000.00
	Total		$ 3,687.00

MISC. EQUIPMENT

2 ea.	Ladders 8' BG 488960	129.00	258.00
2 ea.	Ladders 10' BG 488971	156.00	312.00
2 ea.	Ladders 24' Ext. BG 489020	113.00	226.00
10 ea.	Hand truck BG 301593	37.79	377.90
20 ea.	Creepers BG 192436	17.10	342.00
8 ea.	Drill press vise BG 133898	22.35	178.80
1 ea.	Carpenters tool kit (building maint. BG 015700)		195.00
1 ea.	Electricians tool kit (building maint. BG 488971)		110.00
1 ea.	Plumbers tool kit (building maint. BG 489020)		110.00
	Total		$ 2,109.70*
		Grand Total	$26,759.70

1 Lot	Spare Parts for Machines and Equipment	Total:	$142,730.00

8 TRANS/DIFF

CLASSROOM

UNIT	NAME	UNIT PRICE	TOTAL $
	TRANSPARENCIES		
1 ea.	Clutch assembly (complete set BG 344268)	10.00	10.00
1 ea.	Transmission (complete set BG 344290)	56.00	56.00
1 ea.	Rear axle assembly (complete set BG 344374)	41.00	41.00
	35MM-SLIDE FILMS		
1 ea.	Allisson transmission (complete set)	300.00	300.00
1 ea.	Rockwell differential (complete set)	225.00	225.00
1 ea.	Fuller Transmission (complete set)	375.00	375.00
	BOOKLETS		
20 ea.	Failure analysis (bearings, clutches, shafts)	1.50	90.00
	16MM SOUND FILMS		
1 ea.	Torque converter operation/repair	125.00	250.00*
1 ea.	Automatic transmission operation/repair	300.00	600.00*
1 ea.	Differential and axle operation/repair	300.00	600.00*
		Total	2,547.00
	DISPLAY MODELS		
1 ea.	Rear axle unit	668.00	668.00
1 ea.	Automatic transmission (allisson)	2,000.00	2,000.00
1 ea.	Torque converter	350.00	350.00
1 ea.	Standard transmission (four speed)	450.00	450.00
		Total	3,468.00

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8 TRANSMISSIONS/DIFFERENTIAL COURSE

COST ANALYSIS

1.	SHOP EQUIPMENT----------	$ 19,732.00
2.	HAND TOOLS----------	$ 8,984.00*
3.	DISPLAY MODELS----------	$ 3,468.00*
4.	FILMS, TRANSPARENCIES, BOOKLETS-----	$ 2,547.00*
5.	MISC SUPPLIES----------	$ 500.00
	TOTAL	$ 35,231.00*

8 TRANSMISSIONS/ DIFFERENTAL/AXLES

TRANSMISSION SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Hydraulic press and fixtures BG 109344 (40 ton cap.)	2,825.00	2,825.00
2 ea.	Transmission work bench BG 455824	344.00	688.00
5 ea.	Work bench	480.00	2,400.00
5 ea.	Vise	120.00	600.00
2 ea.	Parts washer BG 134517	230.00	460.00
2 ea.	Chain hoist 2ton electric	900.00	1,800.00
2 ea.	Glider trolley	90.00	180.00
5 ea.	Drop lite reel	33.00	165.00
2 ea.	Grinder/Buffer	142.00	284.00
1 ea.	Drill Press	800.00	800.00
5 ea.	Hose reel (air) with connections	41.00	205.00
5 ea.	Parts basket small(build in Egypt)	20.00	200.00*
5 ea	Transmission repair stand	354.00	1,770.00
5 ea.	Differental repair stand	372.00	1,860.00
10 ea.	Drip pans for stands(build in Egypt	20.00*	200.00
1 ea.	Transmission testing unit(automatic)	4,000.00	4,000.00*
2 ea.	Metric conversion chart	2.00	4.00
1 ea.	Parts dip tank(for auto.trans parts)	200.00	200.00
5 ea.	Parts racks (build in Egypt)	50.00	250.00
4 ea.	Hydraulic jack 5 ton cap. BG 191612	48.00	192.00
8 ea.	Stand jack 10 ton cap BG 191371 set of 2	125.00	500.00
1 ea.	Transmission jack floor model BG 191422	141.00	141.00
4 ea.	Drain pan BG 400924	2.00	8.00
		Total	19,732.00

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9 STEERING SYSTEM COURSE

COST ANALYSIS

1.	SHOP EQUIPMENT----------	$ 8,556.00*
2.	HAND TOOLS----------	$ 7,357.00*
3.	MISC SUPPLIES----------	$ 500.00
	TOTAL	$ 16,413.00*

9 STEERING SYSTEM COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
5 ea.	Work bench	480.00	2,400.00
5 ea.	Vise	120.00	600.00
2 ea.	Parts washer BG 134517	230.00	460.00
5 ea.	Drop lite reel	33.00	165.00
2 ea.	Grinder/buffer	142.00	284.00
1 ea.	Drill press	800.00	800.00
5 ea.	Hose reel (air W/quick couplings)	41.00	205.00
5 ea.	Blow dry guns	5.00	25.00
4 ea.	Hydraulic jack 5 ton cap BG 191612	48.00	192.00
8 ea.	Stand jack 5 ton cap. BG 191371 set of 2	125.00	500.00
1 ea.	Hydraulic press and fixtures BG 189344	2,825.00	2,825.00
5 ea.	Parts basket (small build in Egypt)	20.00	100.00
	HAND TOOLS Total		8,556.00
5 ea.	Torque wrench 3/8" dr. (10-200 in. lbs.)	62.00	310.00
5 ea.	Torque wrench 1/2" dr. (10-250 ft. lbs.)	71.00	355.00
2 ea.	Bushing driver set	32.00	64.00
5 ea.	General mechanics tool set	1,000.00	5,000.00*
5 ea.	Impact wrench 1/2" dr.	60.00	300.00*
5 ea.	Impact access.	26.00	130.00*
2 ea.	Drill index	140.00	280.00
1 ea.	Drill motor 3/8" W/chuck key	75.00	75.00
1 ea.	Drill motor 1/2" W/key	90.00	90.00

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9 STEERING SYSTEM COURSE

HAND TOOLS

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Gear puller set	305.00	305.00
5 ea.	Internal snap ring pliers	8.00	40.00
5 ea.	External snap ring pliers	8.00	40.00
2 ea.	Dial indicator set	50.00	100.00
2 ea.	Micrometer set 0-1" 1-2" 2-3" 3-4"	120.00	240.00
2 ea.	Inside/outside calipers	7.00	28.00
		Total	7,357.00

10 WHEEL ALIGNMENT COURSE

COST ANALYSIS

1.	SHOP EQUIPMENT----------	$ 8,022.00*
2.	HAND TOOLS----------	$ 500.00*
3.	DISPLAY MODELS----------	$ 1,454.80*
4.	MISC SUPPLIES----------	$ 500.00
	TOTAL	$ 10,476.80*

10 WHEEL ALIGNMENT COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Wheel alignment center (Hunter "Autron" BG MOO,AM7)		4,700.00
1 ea.	Wheel balancer (Hunter BG 428085)		1,977.00
1 ea.	Wheel bearing packer Snap-On A-180A		70.00
1 ea.	3/4" socket set Snap-On 422IM-Y		300.00
1 ea.	3/4" drive impact wrench	600.00	600.00
1 ea.	Axle nut sockets Snap-On ANS 1901,1902	20.00	140.00
	" 1921,1904		
	" 1905,1906		
	" 1908		
1 ea.	Budd wheel sockets 3/4" impact Snap-On BW-482	15.00	30.00
	" " BW-626A		
5 ea.	Hose reels (Air) W/connectors quick	41.00	205.00
	Total		8,022.00
	HAND TOOLS		
2 ea.	Alignment tool set Snap-On 2023F-WA	250.00	500.00
	INSTRUCTIONAL MATERIAL		
1 ea.	Alignment principles illustrator	600.00	600.00
1 ea.	Caster/camber simulator	700.00	700.00
1 ea.	Wheel balancing illustrator	50.00	50.00
1 ea.	Caster/camber adjustment chart	10.00	10.00
1 ea.	Wheel alignment specification chart	6.00	6.00
1 ea.	Transparencies (front end assembly BG 344575)	64.60	64.60
1 ea.	Wheel and tire care (Transparencies BG 344732)		24.20
	Total		1,454.80

16 ROAD SERVICE COURSE

COST ANALYSIS

1. EQUIPMENT----------$ 54,000.00

2. MOBILE EQUIPMENT----------$ 35,000.00

TOTAL $ 89,000.00

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16 ROAD SERVICE MECHANIC COURSE

EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Tow truck wrecker heavy duty 1980 model		54,000.00
	(a) Conventional cab.		
	(b) Diesel engine.		
	(c) Holmes model 600 wrecker/body with twin 110" boom tubes.		
	(d) Power unit (worm rapid reverse).		
	(e) Two outboard legs.		
	(f) Two 1/2" x 200" load cables.		
	(g) Two snatch blocks.		
	(h) One hand crank.		
	(i) P.T.O. with all drive components.		
	(j) 1. complete set of mechanics hand tools.		
	(k) Nylon bushed controls.		
	(l) Dual rear tires.		
	(m) Gross cargo weight 42,000 lbs.		
	(n) Two front tow hooks.		
	(o) Four speed transmission.		
	(p) Rear air connections and hoses for towing vehicles with air brakes.		
	(q) Portable welder.		
	(r) Gas welding/cutting outfit.		
	(s) Two 5 ton jacks.		
	(t) Vise.		

16 ROAD SERVICE MECHANIC COURSE

MOBILE EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Fork lift truck 6,000 lb. cap.LPG		15,000.00
1 ea.	Parts truck (flat rack with chains/binders 2 1/2 ton hydraulic hoist)		20,000.00
			35,000.00

17 MACHINE SHOP COURSE

COST ANALYSIS

1.	SHOP EQUIPMENT----------	$ 171,532.00*
2.	HAND TOOLS----------	$ 10,703.22*
3.	FILMS, BOOKS----------	$ 1,481.93*
4.	MISC. SUPPLIES----------	$ 500.00
	TOTAL	$ 184,217.15*

17 MACHINE SHOP COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
2 ea.	Drill press 15" Utility pedestal 3/4 HP	700.00	1,400.00
1 ea.	Lathe 10"	7,000.00	7,000.00
1 ea.	Lathe 13"	6,000.00	6,000.00
1 ea	Milling machine Horiz./(with tooling)	9,500.00	9,500.00
1 ea.	Milling machine Vertical (with tooling)	9,500.00	9,500.00
2 ea.	Tool grinder	550.00	1,100.00
1 ea.	Power hacksaw (reciprocating)	1,650.00	1,650.00
2 ea.	Buffer/Grinder	150.00	300.00
6 ea.	Work bench	480.00	2,880.00
12 ea.	Vise	120.00	1,440.00
1 ea.	Tool storage cabinet	120.00	120.00
1 ea.	Stock rack	324.00	324.00
1 ea.	Connecting rod alignment machine	300.00	300.00
1 ea.	Brake and disc lathe	6,000.00	6,000.00
1 ea.	Drill press HD	2,000.00	2,000.00
2 ea	Magnetic safety shield W/base BG 121610	22.00	44.00
1 ea.	Abrasive cut off saw 10" floor model	600.00	600.00
1 ea.	Crankshaft Grinder	52,000.00	52,000.00*
1 ea.	Boring machine	50,000.00	50,000.00*
1 ea.	Surface grinder W/access	12,500.00	12,500.00
1 ea.	Shaper (with tooling)	5,000.00	5,000.00
2 ea.	Drill motor 3/8" with chuck key	75.00	150.00
2 ea.	Drill motor 1/2" with chuck key	90.00	180.00
1 ea.	Parallels set BG 214820 (set of six)	48.00	48.00
1 ea.	Machine tool cart W/tools BG 459383	1,496.00	1,496.00
		Total	171,532.00

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17 MACHINE SHOP COURSE

HAND TOOLS

UNIT	NAME	UNIT PRICE	TOTAL $
6 ea.	Caliper BG 213637 4"	5.85	35.10
6 ea.	Caliper BG 213659 8"	7.50	45.00
6 ea.	Caliper BG 213660 4"	5.85	35.10
6 ea.	Caliper BG 213681 8"	7.50	45.00
4 ea.	Micrometer BG 213403 0-1"	25.50	102.00
4 ea.	" BG 213414 1-2"	30.50	122.00
4 ea.	" BG 213425 2-3"	33.75	135.00
4 ea.	" BG 213436 3-4"	37.50	150.00
2 ea.	Micrometer (inside BG 160928)	66.50	133.00
2 ea.	Micrometer (depth gauge BG 213604)	46.50	93.00
2 ea.	Telescope gauges (set of 3 BG 213871)	22.80	45.60
2 ea.	" " BG 213850	9.50	19.00
2 ea.	" " BG 213860	11.00	22.00
1 ea.	Combination square set, 12" BG 214494	43.00	43.00
1 ea.	Dial caliper BG 428560	80.00	80.00
1 ea.	Universal dial test indicator BG 214629	40.00	40.00
1 ea.	Precision tool set (metric BG 197484)	1,000.00	1,000.00
1 ea.	Tool storage cabinet W/tools BG 459222-TS-23CT	4,778.00	4,778.00
1 ea.	Tool storage cabinet W/tools BG 459138-TS-22CT	2,287.00	2,287.00
6 ea.	Screwdriver (flatblade BG 429183, 429194, 429201)	1.48	26.64

17 MACHINE SHOP COURSE

HAND TOOLS

UNIT	NAME	UNIT PRICE	TOTAL $
2 ea.	Combination wrench set BG 483331 metric	54.98	109.98
2 ea.	Screwdriver phillips BG 228765-4" BG 228776-6"	1.40	5.60
4 ea.	Cold chisel/punch set	18.80	75.20
10 ea.	Ball pien hammer 12 oz	8.00	80.00
4 ea.	Wing divider 8"	8.00	32.00
2 ea.	Fillet/Radius gage	9.00	18.00
2 ea.	No. 40 Screw pitch gage	7.00	14.00
2 ea.	Tap and drill gauge	14.00	28.00
6 ea.	Center gage	5.00	30.00
24 ea.	Steel rule 604 RE	9.00	216.00
6 ea.	Wire gage AM. Standard wire	9.00	54.00
2 ea.	Tap and Die set BG 219020 (standard)	208.00	416.00
2 ea.	Tap and Die set BG 219063 (metric)	54.00	108.00
2 ea.	Drill index BG 011454	140.00	280.00
		Total	10,703.22
	8MM FILM LOOPS AND CASSETTES		
1 ea.	Metal working lathe series (21 films, 21 cassettes)	28.25	594.00
1 ea.	Milling machine series (4 films,4 cassettes)	28.25	113.00
1 ea.	Drill press series (5 films,5 cassettes)	28.25	141.25
1 ea.	Metal working precision measuring series (24 films)	24.00	576.00
	TEXT BOOKS		
2 ea.	Machine shop operations BG 418553	13.40	26.80
2 ea.	Machine tool technology	15.44	30.88
		Total	1,481.93

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18 SHEETMETAL SHOP COURSE

COST ANALYSIS

1.	SHOP EQUIPMENT	$ 36,319.00
2.	HAND TOOLS	$ 1,867.00
3.	FILMS	$ 1,163.00
4.	MISC SUPPLIES	$ 500.00
	TOTAL	$ 39,849.00*

18 SHEETMETAL SHOP COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Power hacksaw (band type)	1,000.00	1,000.00
2 ea.	Drill press 15"	700.00	1,400.00
10 ea.	Welding carts	101.00	1,018.00
10 ea.	Welding outfit victor (deluxe)	239.00	2,390.00
4 ea.	Spot welders (with access.)	550.00	2,200.00
1 ea.	Press brake (hydra. mechanical model 1448) with access.	8,700.00	8,700.00
1 ea.	Power fab notcher model 2P with access.	2,475.00	2,475.00
1 ea.	Power shear model 36P with access.	1,750.00	1,750.00
1 ea.	Squaring shear 36"	1,000.00	1,000.00
1 ea.	Slip roll with stand 36"	650.00	650.00
2 ea.	Steel stake sets 13 pieces	1,634.00	3,268.00
2 ea.	Stake stands with access.	225.00	450.00
2 ea.	Pedestal grinder	500.00	1,000.00
2 ea.	Grinder/buffer 7" (bench type)	165.00	330.00
2 ea.	Anvil W/stand	246.00	492.00
4 ea.	Bench (sheetmetal W/plates)	582.00	2,328.00
4 ea.	Sheetmetal workbench	394.00	1,576.00
8 ea.	Bench vise	146.00	1,168.00
1 ea.	Metal scrap rack	324.00	324.00
2 ea.	Soldering bench	130.00	260.00
2 ea.	Steel workbench	97.00	194.00
1 ea.	Sheetmetal rack (shorts)	107.00	107.00
1 ea.	Brake riveter	1,500.00	1,500.00

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18 SHEETMETAL SHOP COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Storage cabinet (tools)	739.00	739.00
	Total		36,319.00
	HAND TOOLS		
6 ea.	Tin snips 8" BG 18119	5.97	35.82
6 ea.	Tin snips 11" BG 181130	7.57	45.42
6 ea.	Tin snips 13-1/2" BG 200180	10.74	64.44
6 ea.	Tin snips 10" duckbill BG 200220	5.93	35.58
4 ea.	Seamer (handy BG 199710)	14.52	58.08
2 ea.	Rivet set 00, 1,2,3,4,5,6,7,8	40.00	80.00
10 ea.	Wing dividers 8" BG 199563	7.65	76.50
10 ea.	Combination pliers 8" BG 227287	3.00	30.00
2 ea.	Adjustable wrench 8" BG 194698	4.70	9.40
8 ea.	Hacksaw adjustable BG 235150	7.26	58.08
10 ea.	Screwdriver 6"	1.40	14.00
10 ea.	Tinners riveting hammer	8.65	86.50
10 ea.	Tinners setting hammer	8.65	86.50
10 ea.	Ballpien hammer 12 oz	5.01	50.10
6 ea.	Nippers end cutting 8"	8.57	51.42
4 ea.	Punch/chisel set 12 pcs.	10.00	40.00
10 ea.	Tinners mallets 3x5	4.00	40.00
10 ea.	Blind riveter kit W/access.	35.00	350.00
10 ea.	Sheetmetal grip tool	6.05	60.50
10 ea.	Metal punch set W/bench mount	29.00	290.00

18 SHEETMETAL SHOP COURSE

HAND TOOLS

UNIT	NAME	UNIT PRICE	TOTAL $
10 ea.	Tinners rule 3'	17.00	170.00
10 ea.	Aviation snips R.H.	6.75	67.50
10 ea.	Aviation snips L.H.	6.75	67.50
			1,867 34
	TRANSPARENCIES		
1 ea.	Sheetmetal working (set)	175.00	175.00
1 ea.	Basic sheetmetal (set)	114.00	114.00
1 ea.	Sheetmetal tools (set)	86.00	86.00
1 ea.	Sheetmetal 9 (set)	278.00	278.00
	STRIP FILM		
1 ea.	Set of sheetmetal fabrication 21 films	510.00	510.00
	Total		1,163.00

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19 BLACKSMITH COURSE

COST ANALYSIS

1.	SHOP EQUIPMENT----------	$ 12,685.00*
2.	HAND TOOLS----------	$ 3,037.00*
3.	FILMS, CASSETTES----------	$ 360.00
4.	MISC SUPPLIES----------	$ 500.00
	TOTAL	$ 16,582.00*

NOTE

Same shop and classroom as welding course

19 BLACKSMITH COURSE

FORGE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
2 ea.	Johnson "A" unit composed of	3,660.00	7,320.00
	No. 120 Heat treating unit		
	No. 900 Crucible furnace		
	No. 122 Forge furnace		
	No. 101 Soldering furnace		
	No.118 Soldering furnace		
1 ea.	Cut off shear	105.00	105.00
2 ea.	Workbench with vise	600.00	1,200.00
1 ea.	Test unit (leaf spring)	800.00	800.00
10 ea.	Anvil No. 104 with stand	326.00	3,260.00
	Total		12,685.00
	HAND TOOLS		
20 ea.	Safety glasses	4.00	80.00
1 ea.	Tool cabinet (with tools BG 458983)	2,482.00	2,482.00
6 ea.	Hammer sledge 6 lb.	15.00	90.00
10 ea.	Hacksaw	8.00	80.00
20 ea.	Hammer Blacksmith	9.00	180.00
5 ea.	Tongs 202A BG 206862	25.00	125.00
	Total		3,037.00
	8MM FILM LOOPS/CASSETTES		
1 ea.	Welding films BG 364991,365007,365018 365029, BG 365030,365040,365051,365062, BG 365073,365084,365095,365102	25.00	300.00
1 ea.	Cassettes for the above films BG 365113,365124, BG 365135,365146,365157,365168, BG 365179,365180,365190,365208, BG 365219,365220	5.00	60.00
	Total		360.00

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20 AUTO BODY COURSE

COST ANALYSIS

1.	SHOP EQUIPMENT----------	$ 1,205.00*
2.	HAND TOOLS----------	$ 7,019.00*
3.	INSTRUCTIONAL MATERIAL (FILMS)------	$ 149.00
4.	MISC SUPPLIES----------	$ 500.00
	TOTAL	$ 8,873.00*

20 AUTO BODY COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Body jack set (4 ton Snap-On BJ-4B-SA)	1,000.00	1,000.00
5 ea.	Hose reels (air with quick connectors)	41.00	205.00
			1,205.00
	HAND TOOLS		
1 ea.	Tool cabinet with tools BG 459255	2,861.00	2,861.00
10 ea.	Tool set BG 6691-K (W/box)	227.40	2,274.00
2 ea.	Drill motor 1/2" (electric)	90.00	180.00
2 ea.	Drill motor 1/4" (electric)	93.00	186.00
2 ea.	Drill motor 3/8" (electric)	75.00	150.00
4 ea.	Disc sanders 7"	125.00	500.00
4 ea.	Speed block sanders 4 1/2" x 5 1/2	64.50	258.00
2 ea.	Polishers 7"	125.00	250.00
2 ea.	Drill index	140.00	280.00
4 ea.	12 lb. sledge hammer	20.00	80.00
			7,019.00
	INSTRUCTIONAL MATERIAL		
1 ea.	Auto body repair and painting (set)	149.00	149.00

23 AUTO AIR CONDITIONING COURSE

COST ANALYSIS

1. SHOP EQUIPMENT----------$ 1,686.00*

2. HAND TOOLS----------$ 2,713.00*

3. INSTRUCTIONAL MATERIAL (FILMS)------$ 83.56*

4. TRAINING UNIT----------$ 2,450.00

5. MISC SUPPLIES----------$ 500.00

TOTAL $ 7,432.56*

23 AUTO AIR CONDITIONING COURSE

SHOP EQUIPMENT

UNIT	NAME		UNIT PRICE	TOTAL $
3 ea.	Air conditioning tool set BG 196682		492.00	1,476.00
3 ea.	Universal seal set kit		70.00	210.00
		Total		1,686.00
	HAND TOOLS			
1 ea.	Tool cabinet W/tools BG 459105			2,713.00
	INSTRUCTIONAL MATERIAL			
2 ea.	Text book auto air cond.		7.28	14.56
2 ea.	Instructors guide		2.00	4.00
1 ea.	Slide set BG 365548 (air cond.)			
1 ea.	Text BG 365358			5.00
1 ea.	Transparencies (set) BG 495958			60.00
		Total		83.56
1 ea.	Training unit BG 1820238			2,450.00

11 FUEL INJECTION COURSE

COST ANALYSIS

1. SHOP EQUIPMENT----------$ 22,865.75 *

2. HAND TOOLS(use from diesel engine shop)

3. INSTRUCTIONAL MATERIAL HARDWARE(diesel classroom)

4. DISPLAY MODELS(same as diesel engine)

5. FILMS----------$ 1,096.00

TOTAL $ 23,961.75

FUEL INJECTION LAB

LAB. EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL
1 ea.	Fuel injection test stand BG 205424	2,999.00	12,999.0
1 ea.	Master mounting kit BG 122654	456.00	456.0
1 ea.	Accessory set BG 482087	2,842.75	2,842.7
1 ea.	Supplemental accessory set BG 164890	1,075.00	1,075.0
1 ea.	PT injector set BG 205446	232.00	232.0
2 ea.	Calibrating fluid 15Gal.BG 165764	129.00	258.0
1 ea.	Nozzle tester BG 213001	295.00	295.0
1 ea.	High pressure hose line BG 165786	28.00	28 0
1 ea.	Connector set BG 186295	50.00	50.0
1 ea.	Injector test set for Detroit BG 186284	638.00	638.00
1 ea.	Spray cup set BG 205457	8.00	8.00
1 ea.	Adapeter for pencil nozzles BG 120280	14.00	14.00
1 ea.	General purpose nozzle service kit BG 186408	163.00	163.00
1 ea.	Detroit injector service kit BG 186380	404.00	404.00
3 ea.	Lapping compound BG 166070 (1000 grit)	24.00	72.00
2 ea.	Lapping blocks BG 186419	205.00	410.00
2 ea.	Lapping compound BG 186420 (600 grit)	18.00	36.00
2 ea.	Fuel pump Holder BG 493411	268.00	536.00
2 ea	Adapter plate Cat. BG 493393	193.00	386.00
2 ea.	Adapter plate Detroit	251.00	502.00
1 ea.	Arbor press BG 198706 1 Ton Cap.	80.00	80.00
1 ea.	Parts washer	215.00	215.00
1 ea.	Vise	120.00	120.00
1 ea.	Hose reel air with couplings	41.00	41.00
1 ea.	Blow dry gun	5.00	5.00
2 ea.	Parts basket small(build in Egypt)	20.00	20.00

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FUEL INJECTION LAB

LAB. EQUIPMENT CONT.

UNIT	NAME	UNIT PRICE	TOTAL
5 ea.	Safety glasses	4.00	20.00
2 ea.	Work bench	480.00	960.00
		Total:	$22,865.75

HAND TOOLS

USE HAND TOOLS FROM DIESEL ENGINE SHOP

TRANSPARENCIES

1 ea.	Engine principles set of 50 BG 363922	227.00	227.00

SLIDE FILM

1 ea.	Diesel rebuild and repair BG 185566 (complete set)	589.00	589.00
1 ea.	Diesel fuel pump overhaul (Cat or Detroit)	280.00	280.00*

TOTAL $ 1,096.00

1. SHOP EQUIPMENT----------$ 5,420.00*

2. HAND TOOLS (same as trans shop)

3. TEACHING CENTER----------$ 1,875.00*

4. BOOKS----------$ 200.00

5. DISPLAY MODELS----------$ 3,190.00*

6. FILMS BOOKLETS----------$ 1,270.00*

7. MISC SUPPLIES----------$ 500.00

TOTAL $ 12,455.00*

12 BASIC HYDRAULICS

13 HYDRAULICS REPAIR

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Hydraulic system component test bench	5,000.00	5,000.00*
2 ea.	Pressure gauge with hoses for testing (oil)	10.00	120.00*
	1. 0-50 psi 2. 0-100 psi 3. 0-200 psi		
	4. 0-400 psi 5. 0-1000 psi 6. 0-3500 psi		
2 ea.	Flow meter (portable)	150.00	300.00*
	Total		5,420.00
	CLASSROOM EQUIPMENT		
1 ea.	Fluid power teaching system BG 179907	1,875.00	1,875.00
	BOOKS		
20 ea.	Basic fluid power text	10.00	200.00*
	DISPLAY MODELS		
1 ea.	Hydraulic cylinder cutaway	100.00	100.00
1 ea.	Hydraulic pump cutaway (gear type)	150.00	150.00
1 ea.	Hydraulic pump cutaway (vane type)	150.00	150.00
1 ea.	Power steering pump cutaway	75.00	75.00
1 ea.	Hydraulic brake system display board	1,300.00	1,300.00*
1 ea.	Heavy air brake system display board	1,300.00	1,300.00*
1 ea.	Master cylinder cutaway	60.00	60.00*
1 ea.	Wheel cylinder cutaway	35.00	35.00*
1 ea.	Auto. air compressor cutaway	250.00	250.00*
	Total		3,190.00

12 BASIC HYDRAULICS

13 HYDRAULICS REPAIR

16MM SOUND FILMS

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Basic Hydraulics complete set	900.00	900.00*
1 ea.	Understanding the automotive hydraulic brake system	150.00	150.00*
1 ea.	Understanding the air brake system	150.00	150.00*
	35MM SLIDE FILM		
1 ea.	Hydraulics set BG 393519	70.00	70.00
	Total		1,270.00

14 BRAKES AND BRAKE SHOP COURSE

COST ANALYSIS

1. SHOP EQUIPMENT----------$ 9,770.05

2. HAND TOOLS----------$ 2,011.90*

3. INSTRUCTIONAL MATERIAL----------$ 1,408.50*

4. MISC SUPPLIES----------$ 500.00

TOTAL $ 13,690.45*

14 BRAKE AND BRAKE SHOP COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
1 ea.	Lathe (heavy duty drum and disc W/attac.) (BG 389457)		6,257.00
1 ea.	Portable hydraulic crane BG 191572	752.85	752.85
1 ea.	Washer brake assembly BG 389669	149.50	149.50
3 ea.	Micrometer (brake drum BG 389731)	98.50	295.50
2 ea.	Bleeder (brake W/adapters BG 192195	220.00	440.00
4 ea.	Brake hone-disc W/spare stones BG 157942	31.30	125.00
2 ea.	Disc rotor indicator BG 159390	23.35	46.70
1 ea.	Brake drum riveter set		198.50
1 ea.	Brake shoe deliner riveter		500.00
1 ea.	Brake shoe arcing machine		600.00
1 ea.	Dolly,Dual Wheel, BG397977	405.00	405.00
		Total	9,770.05

HAND TOOLS

6 ea.	Tubing tool kit BG 184384	32.50	195.00
2 ea.	Double flaring tool kit BG 295706	19.00	38.00
3 ea.	Disc brake service kit BG 192202	245.00	735.00
10 ea.	Brake hand tool set BG 157909	86.40	864.00
3 ea.	Replacement stones BG 157953	9.80	29.40
3 ea.	Brake shoe setting gauge BG 389709	12.70	38.10
2 ea.	Brake drum wear gauge BG 416962	16.25	32.50
2 ea.	Brake drum wear gauge BG 389742	20.25	40.50
10 ea.	Brake adjusting tool BG 295622	3.94	39.40
		Total	2,011.90

INSTRUCTIONAL MATERIAL

1 ea.	Hydraulic demostration board BG 185186	364.00	364.00
1 ea.	Hydraulic demonstration board BG 185226(disc)	364.00	364.00

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14 BRAKES AND BRAKE SHOP COURSE

INSTRUCTIONAL MATERIAL

UNIT	NAME	UNIT PRICE	TOTAL $
	D C A FILM LOOPS		
1 ea.	Self adjusting brake system (set)	84.75	84.75
1 ea.	Disc brakes (set)	169.50	169.50
1 ea.	Brake lathe operation (set)	254.25	254.25
1 ea.	Disc brake lathe (set)	141.00	141.00
	TRANSPARENCIES		
1 ea.	Automotive brakes (set)	31.00	31.00

15 WELDING COURSE COST ANALYSIS

1.	SHOP EQUIPMENT----------	$ 38,417.00*
2.	HAND TOOLS----------	$ 2,798.00*
3.	SHOP MATERIALS----------	$ 7,338.50*
4.	FILMS, BOOKLETS, CHARTS----------	$ 1,924.50*
5.	MISC. SUPPLIES----------	$ 500.00
	TOTAL	$ 50,978.00*

15 WELDING COURSE

SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
10 ea.	Gas and arc welding table (modulex)	500.00	5,000.00
10 ea.	Gas torch holder(model 500)	22.00	220.00
10 ea.	Set of fire brick(model 5170)	16.00	160.00
10 ea.	Vise/stand combo. (model 5172)	72.00	720.00
10 ea.	Drawer (model 5171)	38.00	380.00
12 ea.	Victor welding set(model 315BG)	239.00	2,390.00
10 ea.	Exhaust hoods (model H3648)	390.00	3,900.00
10 ea.	Electric arc welder (250 AMP model 901-572-250-P)	523.00	5,230.00
10 ea.	Cable lead set(model 404-042)	85.00	850.00
2 ea.	Automatic cutting machine(model VU-150)	691.00	1,382.00
2 ea.	Arc welder (portable)	300.00	600.00
1 ea.	Bend tester	300.00	300.00
1 ea.	Tensile tester	900.00	900.00
1 ea.	Shear H.D. (flat round angle hyaraulic)	725.00	725.00
1 ea.	Universal bender	600.00	600.00
2 ea.	Grinder (pedestal type)	500.00	1,000.00
2 ea.	Drill press 15"	750.00	1,500.00
1 ea.	Power hacksaw (band type)	1,000.00	1,000.00
4 ea.	Work bench	480.00	1,920.00
4 ea.	Vise	120.00	480.00
1 ea.	Metal and scrap rack	324.00	324.00
1 ea.	Storage cabinet	740.00	740.00
1 ea.	Power cut off saw 10"	890.00	890.00
2 ea.	Exhaust fan motor unit	2,500.00	5,000.00
1 ea.	Storage cabinet (with tools BG 458917)	1,943.00	1,943.00

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15 WELDING COURSE
SHOP EQUIPMENT

UNIT	NAME	UNIT PRICE	TOTAL $
2 ea.	Cylinder truck Rubber tired	50.00	100.00
3 ea.	Replacement blades (flat shear)	15.00	45.00
3 ea.	Replacement blades (round shear)	17.00	51.00
3 ea.	Replacement blades (angle shear)	19.00	57.00
2 ea.	Replacement blades (cut off, 10")	5.00	10.00
		Total	38,417.00

HAND TOOLS

10 ea.	Tip cleaner(model C-9 standard)	3.00	30.00
2 ea.	Tip cleaner (model E-9 expandable)	4.00	8.00
20 ea.	Hammer(chipping)	6.00	120.00
20 ea.	Clamp (vise grip welding BG 203166 or No-9R)	7.00	140.00
10 ea.	Clamp (C-BG 225036) 2 1/2"	5.00	50.00
10 ea.	Clamp ("C" BG 225069) 5"	8.00	80.00.
10 ea.	Clamp ("C" BG 225080) 8"	14.00	40.00
3 ea.	Chisel set (cold) BG 225902	19.00	57.00
10.ea.	Hammer (ball pien BG 352682)	5.00	50.00
10 ea.	Helmet (welding model KP 2748 BG 262055)	12.00	120.00
24 ea.	Safety glasses BG 404399,9148	4.00	96.00
36 ea.	Gloves (welders BG 202744-565FL)	6.00	216.00
7 ea.	Cape and sleeves (welders BG 493254/SM)	22.00	154.00
10 ea.	Cape and sleeves (welders BG 493265/MED)	22.00	220.00
8 ea.	Cape and sleeves (welders BG 493276/L)	22.00	176.00
2 ea.	Cape and sleeves (welders BG 493287/XL)	22.00	44,00
20 ea.	Apron (welders BG 493305-12165)	14.00	280.00
4 ea.	Drill (electric portable BG 438590-621 H D)	72.00	288.00
2 ea.	Grinder (portable)	200.00	400.00
1 ea.	Set of combination wrenches BG 476355	74.00	74.00
1 ea.	Set of combination wrenches BG 483331 (metric)	55.00	55.00
		Total	2,798.00

15 WELDING COURSE

UNIT	NAME	UNIT PRICE	TOTAL $
200 lbs.	No.7 mild steel rod (gas welding BG 203228 1/16")	.98	196.00
300 lbs.	" " " " " " BG 203239 3/32")	.89	267.00
300 lbs.	" " " " " " BG 203240 1/8")	.80	240.00
100 lbs.	" " " " " " BG 203261 3/16")	.76	76.00
100 lbs.	" " " " " " BG 203272 1/4")	.75	75.00
200 lbs.	No. 9 cast iron rod (gas welding BG 203389 3/16")	1.88	376.00
200 lbs.	" " " " " " BG 203390 1/4")	1.62	324.00
100 lbs.	" " " " " " BG 203407 3/8")	1.31	131.00
200 lbs.	No. 27 low fuming rod (gas welding BG 203312 1/16")	3.79	758.00
300 lbs.	" " " " " " " BG 203323 3/32")	3.42	1,026.00
300 lbs.	" " " " " " " BG 203334 1/8")	3.19	957.00
100 lbs	" " " " " " " BG 203345 3/16")	3.02	302.00
50 lbs.	" " " " " " " BG 203356 1/4")	2.91	145.50
50 lbs.	" " " " " " " BG 203367 3/8")	2.91	145.50
4 ea.	1 lb. can brazing flux BG 203440	2.75	11.00
250 lbs	Mild steel rod (electric arc/AWS class 7014 BG 433413 1/8")	.59	147.50
500 lbs.	" " " " " " " " BG 433424 5/32")	.57	285.00
500 lbs	" " " " " " " " BG 433435 3/16")	.57	285.00
500 lbs.	" " " " " " " " BG 433446 7/32")	.56	280.00
250 lbs.	" " " " " " " " BG 433457 1/4")	.56	140.00
150 lbs.	Low hydrogen rod(electric arc cl. E 7018 AC/DC BG 202521 3/32")	.72	108.00
150 lbs.	" " " " " " " BG 382130 1/8")	.58	87.00
150 lbs.	" " " " " " " BG 382173 1/4")	.58	87.00
150 lbs.	" " " " " " " BG 435697 5/16")	.58	87.00
500 lbs.	" " " " " " " BG 382140 5/32")	.57	285.00
500 lbs.	" " " " " " " BG 382151 3/16")	.57	285.00
400 lbs	" " " " " " " BG 382162 7/32")	.58	232.00
		Total	7,338.50

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15 WELDING COURSE CLASSROOM

INSTRUCTIONAL MATERIAL

UNIT	NAME	UNIT PRICE	TOTAL $
	16MM SOUND FILMS		
1 ea.	Oxygen-Acetylene welding (Victor)	150.00	150.00*
	BOOKLETS		
20 ea.	Basic Oxyacetylene welding BG 351478	4.00	80.00
2 ea.	answer book BG 351489	1.00	2.00
20 ea.	Gas and A/C arc welding and cutting BG 351490	3.50	70.00
20 ea.	Forging and welding BG 351507	10.00	200.00
20 ea.	Basic arc welding BG 351518	4.00	80.00
2 ea.	Answer book BG 351529	1.00	2.00
	FILM STRIPS		
1 ea.	Basic arc welding 12 lesssons BG 436623	425.00	425.00
1 ea.	Basic arc welding instructors guide BG 436624	10.00	10.00
20 ea.	Basic arc welding students workbook BG 436646	10.00	200.00
1 ea.	Basic arc welding script book BG 436645	10.00	10.00
1 ea.	Gas metal-- Arc welding 8 lessons BG 436718	297.00	297.00
1 ea.	Instructors guide BG 436729	10.00	10.00
1 ea.	Script book BG 436730	15.00	15.00
20 ea.	Student workbook BG 436740	18.00	366.00
	WALL CHARTS		
5 ea.	Flame characteristic (Victor)	1.50	7.50
		Total	1,924.50

ANNEX 10(d)

VEHICLE MAINTENANCE TRAINING
PROJECT #263-0114
Project Paper - GSLT

PHYSICAL FACILITY

LAYOUT AND USE OF GSLT TRAINING FACILITY

rev.11/15/

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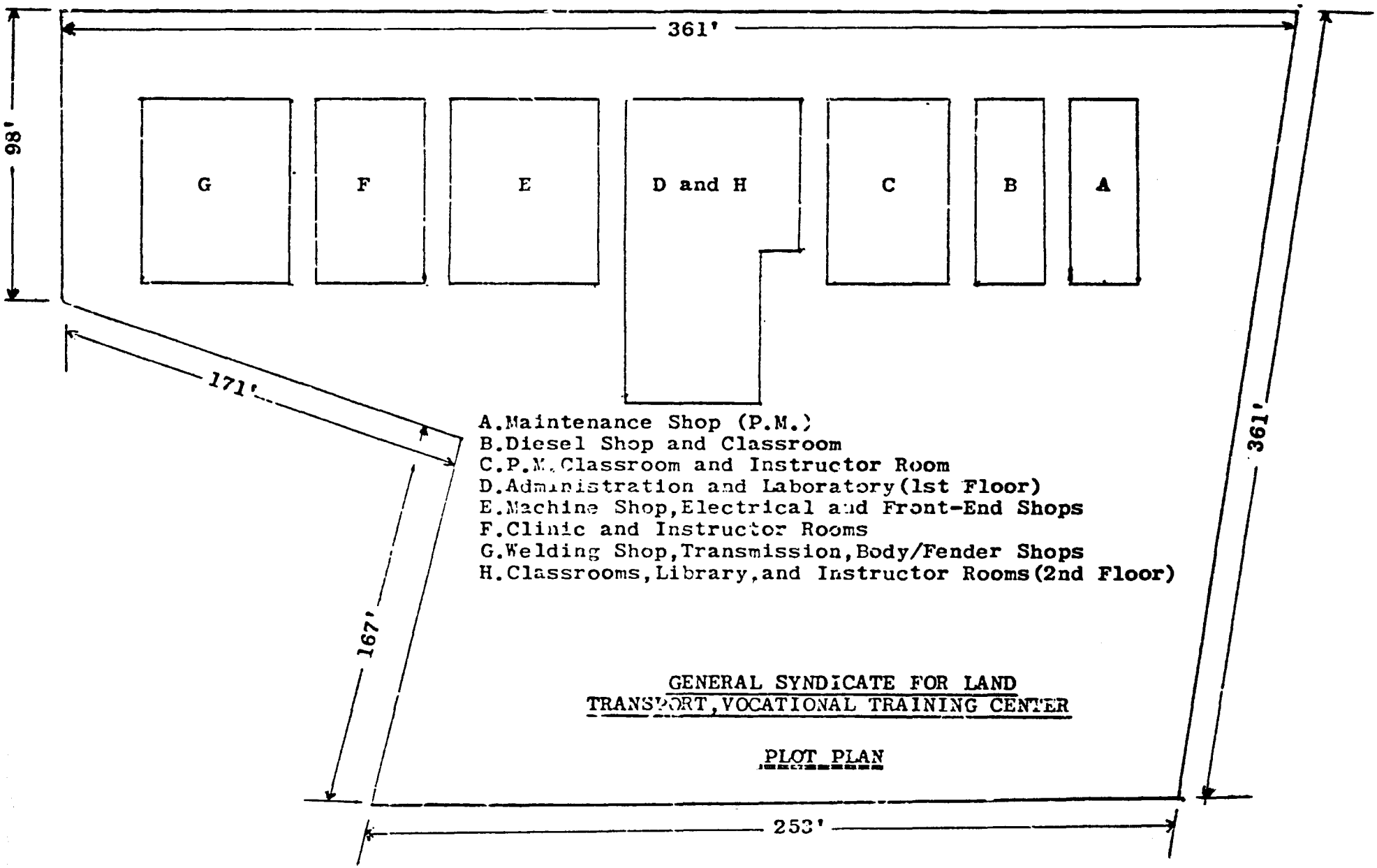
GENERAL SYNDICATE FOR LAND TRANSPORT WORKERS

PROPOSED PLAN

BUILDING PLAN NO. 1

TRAINING CENTER—MATERIA, EGYPT



GENERAL SYNDICATE FOR LAND TRANSPORT,VOCATIONAL TRAINING CENTER

PLOT PLAN

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RECOMMENDATIONS FOR CENTER

1. Continuious pour concrete shop floors. (slab type construction.)
2. Ten(10) compressed air outlets in each shop area.
3. Ten(10) electrical outlets in each shop area.
4. Adequate drainage in each shop area and aprons.
5. Classrooms to have tile floors.
6. Classrooms to be painted in light tone colors.
7. Fluorescent lighting in all classrooms and shop areas.
8. Air conditioning in all of the classrooms, fuel injection room and transmission room in the shop. (B-III/G-II)
9. Scrap area to be established and enclosed so as not to be an eyesore.
10. Window shades to be installed on all classroom windows.
11. Grounds will be landscaped with appropriate trees, grass, plants and flowers.
12. All buildings will be painted inside and outside.
13. Sufficient maintenance personnel be employed to keep training center in a spotless condition and in good repair.
14. Inspection Pit in Building A-I must be equipped with adequate drainage to facilitate clean-up operations.
15. Underground storage tank for used oil drained from vehicles with a 500 gallon capacity.
16. Septic tank or simular drainage for the steam cleaning area. (reference c., Buildg. A)

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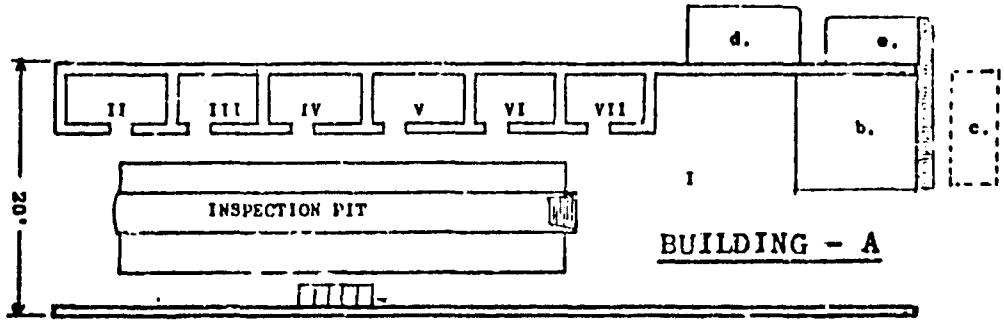
SPECIFICATIONS

BUILDING - A

1. I---Preventive Maintenance Shop.It is 20' x 64'10".
2. II--Toolroom.
3. III-Workshop.
4. IV--Cloakroom or Change Room.
5. V---Partsroom.
6. VI--Air Compressor Room.
7. VII-Oil Storage Room for overhead lubrication rack.
8. a.--Overhead Lubrication Rack.
9. b.--Designated steam cleaning area.
10. c.--Septic tank or simular device for drainage.
11. d.--Hot Dip Tank for cleaning parts.
12. e.--Steam Cleaner Unit.(may be portable or stationary)
13. Building - A contains approximately 1,282 square feet.

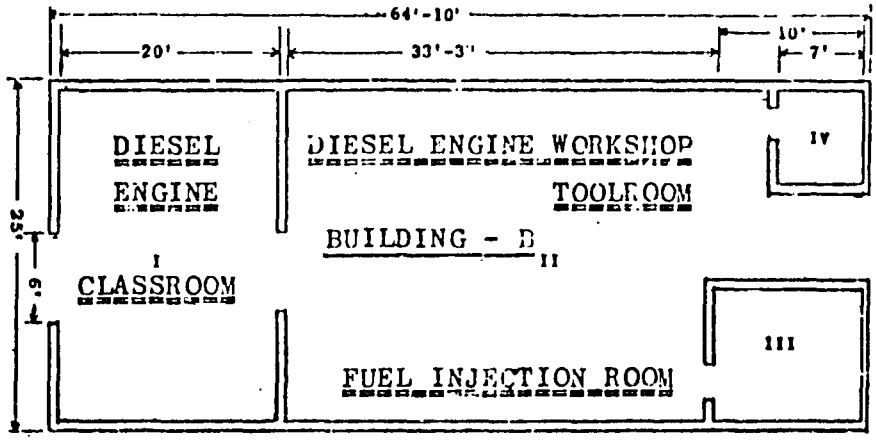


NOT DRAWN TO SCALE

SPECIFICATIONS

BUILDING - B

1. I---Classroom to teach Diesel Engine Mechanics. It is 20' x 25' and is approximately 500 square feet.
2. II--Diesel Engine Workshop is 25' x 33'3" or approximately 951 square feet
3. III-Fuel Injection Room is 10' x 10' or approximatel 100 square feet.
4. IV--Toolroom is 7' x 7' or approximately 49 square feet.
5. Building - B contains approximately 1,602.5 square feet.



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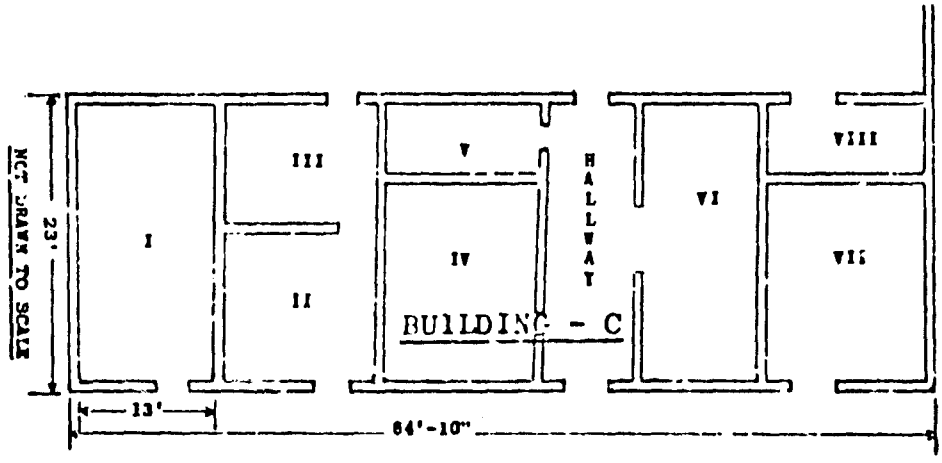
SPECIFICATIONS

BUILDING - C

1. I----Preventive Maintenance Classroom. It is 13' x 23' or approximately 299 square feet.
2. II---Instructors Study Room.
3. III--Instructors Study Room.
4. IV---Cloakroom or Change Room.
5. V----Buffet.
6. VI---Restroom or W.C.
7. VII--Prayer Room.
8. VIII-Extra room at this time
9. Building - C contains approximately 1,474 square feet.



NOT DRAWN TO SCALE

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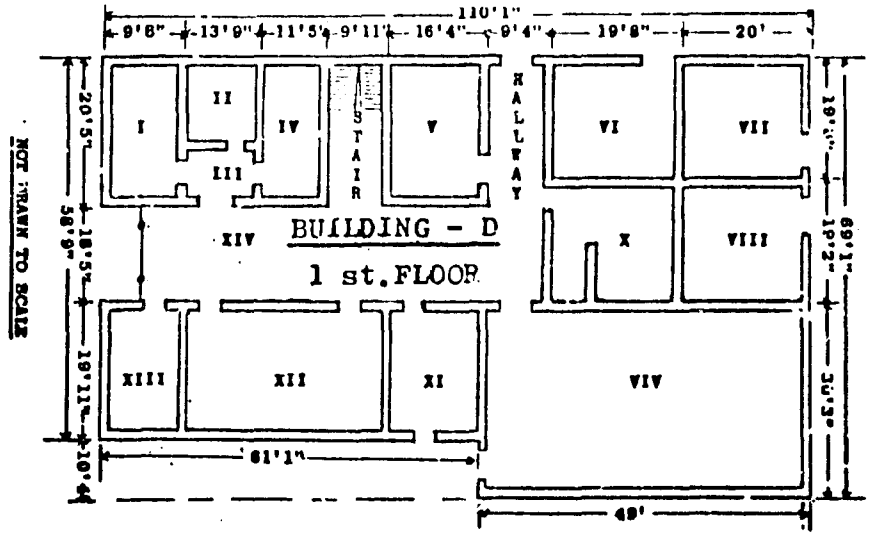
SPECIFICATIONS

BUILDING - D

1. I----Administration Office.
2. II---Administration Office.
3. III--Hallway.
4. IV---Administration Office.
5. V----Administration Office.
6. VI---Storeroom.
7. VII---Storeroom.
8. VIII-Storeroom.
9. VIV--Assembly Hall is approximately 30'3" x 49' or 1,485 square feet.
10. X----Storeroom.
11. XI---Restroom or W.C.
12. XII--Laboratory is approximately 19' x 35' or 665 square feet.
13. XIII-Information Office.
14. XIV--Entrance Hall.
15. Building - D contains approximately 6,934 square fee



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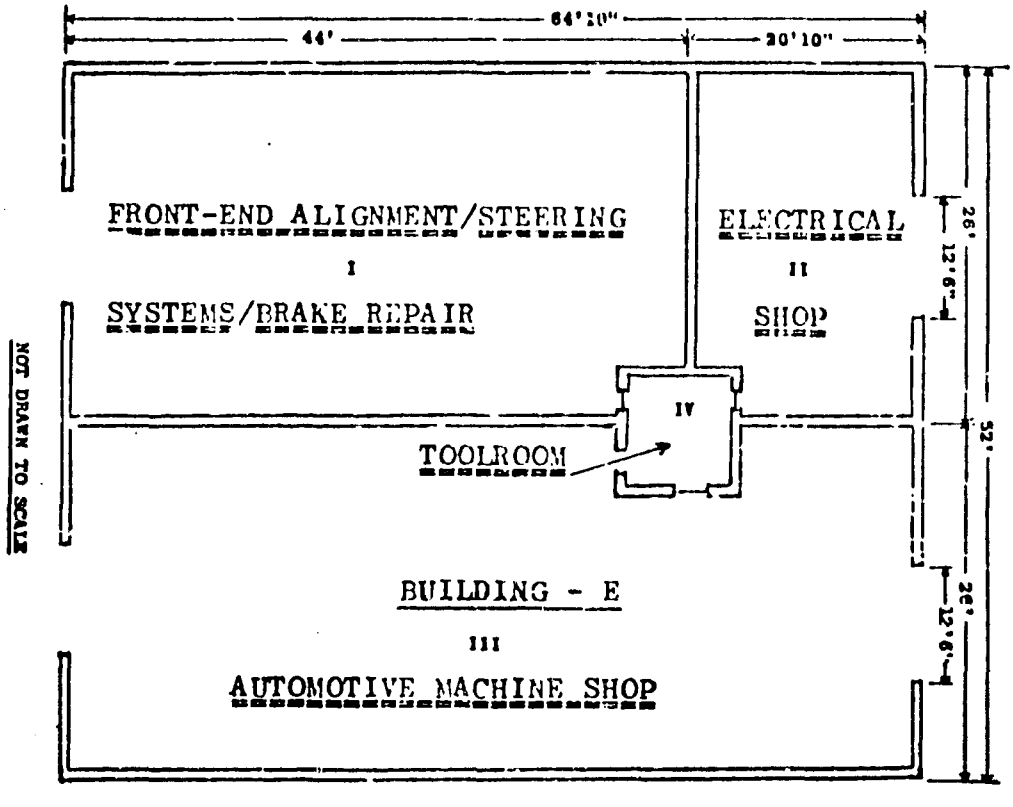
SPECIFICATIONS

BUILDING - E

1. I---Front-End Alignment, Brake and Steering System Repair. Shop area is 26' x 44' or 1,128 square feet.
2. II--Electrical Repair Shop is approximately 20'10" x 26' or 506 square feet.
3. III-Automotive Machine Shop is 26' x 64'10" or approximately 1,635 square feet.
4. VI--Toolroom is 8' x 8' or approximately 64 square feet and will service the shop areas in this building.
5. Building - E contains approximately 3,333 square feet.



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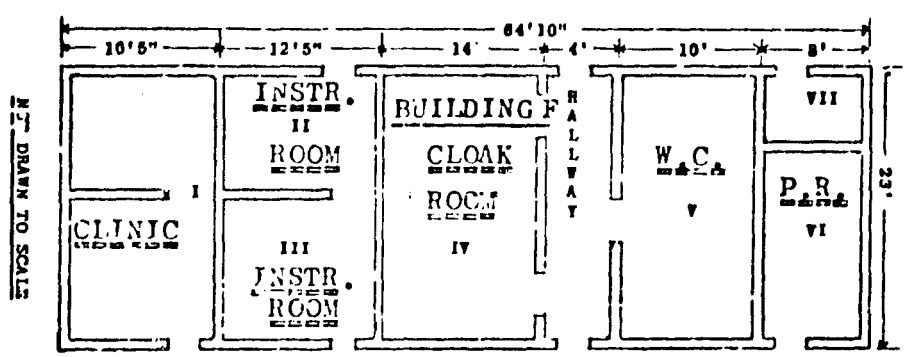
SPECIFICATIONS

BUILDING - F

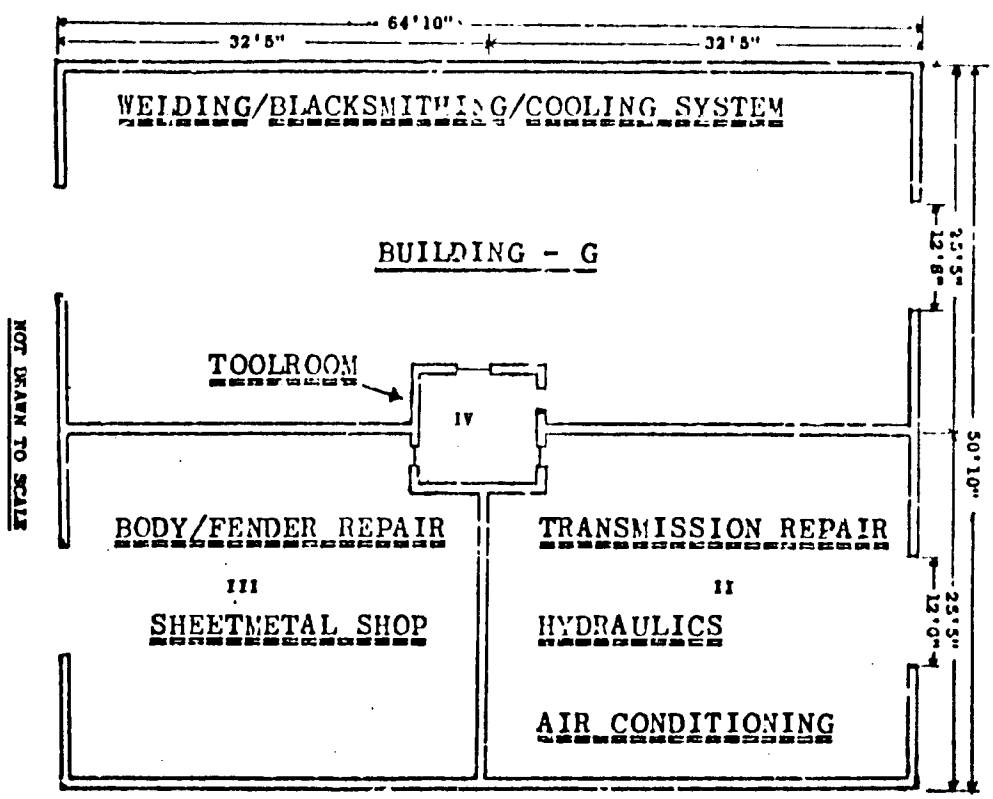
1. I---Clinic is 10'5" x 23' and has approximately 241 square feet.
2. II--Instructors Study Room.
3. III-Instructors Study Room.
4. IV--Cloakroom or Change Room.
5. V---Restroom or W.C.
6. VI--Prayer Room.
7. VII-Extra room at this time.
8. Building - F has approximately 1,474 square feet.



SPECIFICATIONS

BUILDING - G

1. I---Gas and Electric Arc Welding, Blacksmithing and Cooling System Repair. Shop area is 25'5" x 64'10" or approximately 1,603 square feet.
2. II--Transmission Repair, Hydraulic System and Air Conditioning Repair. Shop area is 25'5" x 32'5" or approximately 313 square feet
3. III-Body/Fender Repair and Sheetmetal Shop. Area is 25'5" x 32'5" or approximately 813 square feet.
4. VI--Toolroom will service shop areas in this building and is 8' x 8' or approximately 64 square feet.
5. Building - G has approximately 3,333 square feet.



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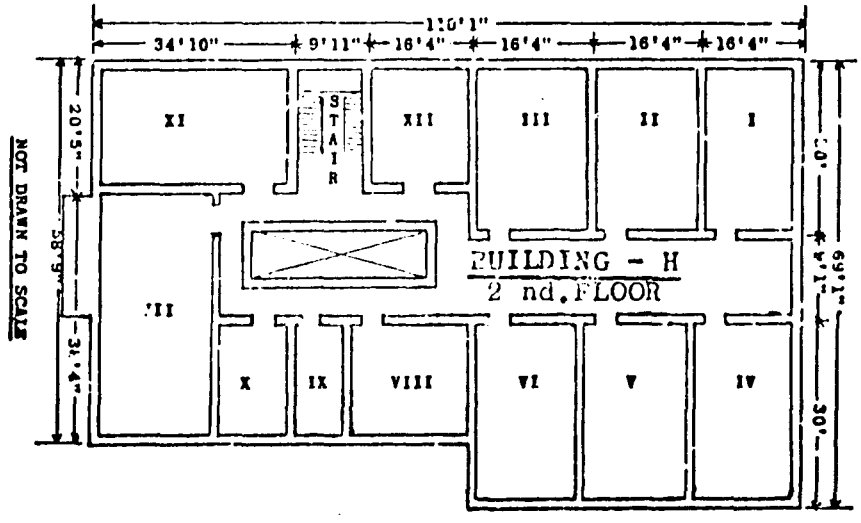
SPECIFICATIONS

BUILDING - H (2nd floor of Building D)

1. I-----Classroom is 16'4" x 30' or approximately 492 square feet.
2. II----Classroom, same as number 1.
3. III---Classroom, same as number 1.
4. IV----Classroom, same as number 1.
5. V-----Classroom, same as number 1.
6. VI----Classroom, same as number 1.
7. VII---Classroom, area is 38'4" x 16'4" or approximately 630 square feet.
8. VIII--Restroom or W.C.
9. IX----Instructors Study Room.
10. X-----Instructors Study Room.
11. XI----Library, area is 20'5" x 34'10" or approximately 699 square feet.
12. XII---Instructors Study Room.
13. Building - H has approximately 6,984 square feet.
14. Total square footage of all buildings combined is 26,466.5 square feet.



GENERAL SYNDICATE FOR LAND TRANSPORT WORKERS

SCHEDULES

COURSE	TITLE	MANIPULATIVE SKILL		ACADEMIC SKILL
C-1.	The Training Center	Bldg.A,Rm.I	-	Bldg.C,Rm.I
C-2.	Shop Procedures	Bldg.A,Rm.I	-	Bldg.C,Rm.I
C-3.	Automotive Tools/Equipment	Bldg.A,Rm.I	-	Bldg.C,Rm.I
C-4.	Preventive Maintenance	Bldg.A,Rm.I	-	Bldg.C,Rm.I
C-5.	Diesel Engines	Bldg.B,Rm.II	-	Bldg.B,Rm.I
C-6.	Electricity(Basic)	Bldg.E,Rm.II	-	Bldg.H,Rm.VI
C-7.	Electricity(Specialized)	Bldg.E,Rm.II	-	Bldg.H,Rm.VI
C-8.	Transmission/Differential	Bldg.G,Rm.II	-	Bldg.H,Rm.III
C-9.	Steering Systems	Bldg.E,Rm.I	-	Bldg.H,Rm.V
C-10.	Front-End Alignment	Bldg.E,Rm.I	-	Bldg.H,Rm.V
C-11.	Diesel Fuel Injection	Bldg.B,Rm.III	-	Bldg.B,Rm.I
C-12.	Basic Hydraulics	Bldg.G,Rm.II	-	Bldg.H,Rm.III
C-13.	Hydraulic Systems(specialized)	Bldg.G,Rm.II	-	Bldg.H,Rm.III
C-14.	Automotive Brakes(specialized)	Bldg.E,Rm.I	-	Bldg.H,Rm.V
C-15.	Gas and Electric Arc Welding	Bldg.G,Rm.I	-	Bldg.H,Rm.II
C-16.	Emergency Road Service	Bldg.A,Rm.I	-	Bldg.H,Rm.VII
		Bldg.B,Rm.II	-	Bldg.B,Rm.I
		Bldg.E,Rm.I	-	Bldg.H,Rm.V
		Bldg.E,Rm.II	-	Bldg.H,Rm.VI
		Bldg.G,Rm.I	-	Bldg.H,Rm.II
		Bldg.G,Rm.II	-	Bldg.H,Rm.III
C-17.	Automotive Machine Shop	Bldg.E,Rm.III	-	Bldg.H,Rm.IV

GENERAL SYNDICATE FOR LAND TRANSPORT WORKERS

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SCHEDULES

COURSE	TITLE	MANIPULATIVE SKILL	ACADEMIC SKILL
C-18.	Automotive Sheetmetal	Bldg.G,Rm.III	Bldg.H,Rm.I
C-19.	Blacksmith(specialized)	Bldg.G,Rm.I	Bldg.H,Rm.II
C-20.	Automotive Metal Shop(specialized)	Bldg.G,Rm.III	Bldg.H,Rm.I
C-21.	Automotive Radiator Repair	Bldg.G,Rm.I	Bldg.H,Rm.II
C-22.	Upholstry	(DELETED)	
C-23.	Automotive Air Conditioning	Bldg.G,Rm.II	Bldg.H,Rm.III
C-24.	Supply Room Procedures(partsman)	Bldg.D,Rm.X	Bldg.C,Rm.I
C-25.	Supervision		Bldg.H,Rm.XII
C-26.	Tire Repair	(DELETED)	

Note: Course Codes,C-1,C-2,etc.,are used throughout the text.

ANNEX 10(e)

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VEHICLE MAINTENANCE TRAINING
Project # 263-0114
Project Paper - GSLT

INSTRUCTORS

INSTRUCTORS REQUIRED TO TEACH COURSES & PROGRAMS TO BE OFFERED AT GSLT TRAINING CENTER

NOTE: Instructor codes (SSI, STI and BI) established in this section are used throughout Annex 10.

Given the types of training to be offered and the numbers of workers to be trained, it is estimated that the GSLT will require a minimum of 22 full time instructors. Each instructor will be a specialist, capable of teaching both theory and shop, in a number of specific vehicle maintenance areas. He will also have general knowledge in all others. At times, instructors will assist in the teaching of courses in which they are not specialists. Some courses will be taught by a three-instructor team consisting of two specialists and an assistant. In no case will a course be taught by less than two instructors, and at least one of the two will be a specialist.

Participant training provided by the project is planned to insure that the GSLT training center has at least two specialized instructors for each course offered. As conditions change an instructor may be moved from one assignment to another.

Instructor assignments are specified below. Note that the proposed initial assignments are ideal in that all courses may be covered by at least one specialized instructor. If problems develop, an instructor becomes sick or leaves the GSLT, a back-up instructor will be available. As necessary instructors may be moved from one slot to another.

Three basic groups of instructors are required:

1. Shop Supervisor Instructors (SSI), 8 individuals;

2. Shop/Theory Instructors (STI), 9 individuals;

3. Backshop Instructors (BI), 5 individuals.

Shop Supervisor Instructors (SSI) will be employed full time in the shops, one to each shop, for "hands-on" type training. Each will be responsible for the overall condition and functioning of his shop. Ideally, each would be a specialist in each course taught within his shop. SSI assignments are specified below:

SHOP SUPERVISOR INSTRUCTOR ASSIGNMENTS

Instruction	Will Work in . . . Shop	Where Course(s) Are Taught
SSI-1. . . .	Preventive Maintenance. . . .	C-4
SSI-2. . . .	Diesel/Fuel Injection	C-5, 11
SSI-3. . . .	Front-end, Brakes, Steering .	C-9, 10, 14

Instruction	Will Work in . . . Shop	Where Course(s) Are Taught
SSI-4	Electrical	C-6, 7
SSI-5	Machine	C-17
SSI-6	Blacksmith, Welding, Cooling Systems	C-15, 19, 21
SSI-7	Transmission, Hydraulic, Air Conditioning.	C-8, 12, 13, 23
SSI-8	Body/Fender, Sheet Metal . . .	C-18, 20

Shop/Theory Instructors (STI) will be employed in both the classrooms and the shops. Ideally, they will present the theory portion of each course and then work with the Shop Supervisor Instructors during the shop portion of the course. The STI will be assigned to a particular Occuptation/Trade area or group of areas. Assignments are listed below.

SHOP/THEORY INSTRUCTOR ASSIGNMENTS

Instructor	Will Work With Occupation/Trades	And Teach or Assist with Courses
STI-1	O/T-9.	C-5,6,8,9,12,14,15,16
STI-2	O/T-11, 15, 16 .	C-15, 19, 21
STI-3	O/T- 5, 8, 18, 22	C-9, 10, 12, 14
STI-4	O/T-3, 7, 10	C-8, 12, 13, 23
STI-5	O/T-14,	C-17
STI-6	O/T-2, 6, 20 . .	C-5, 11
STI-7	O/T-1, 17. . . .	C-17
STI-8	O/T-4	C-4
STI-9	O/T-12, 13 . . .	C-12, 13

To cover courses where no specialist, or only one specialist is available, the following Backstop Instructors (BI) are required.

To cover courses where no specialist, or only one specialist is available, the following Backstop Instructors (BI) are required.

BI-1	A specialist in C-8
BI-2	A specialist in C-18
BI-3	A specialist in C-20
BI-4	A specialist in C-24
BI-5	A specialist in C-8

Again, given their qualifications, instructors may be moved from one assignment to another as the situation dictates.

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ANNEX 10(f)

VEHICLE MAINTENANCE TRAINING
PROJECT 263-0114
Project Paper - GSLT

TRAINING CENTER STAFF

(Staff Required to Operate
the Training Center ----
Exclusive of Instructors)

(SUBMITTED BY THE GSLT)

The Board of Directors consists of the following:

		NUMBER OF MEMBERS
(a)	Chairman	1
(b)	Director	1
(c)	One Representing the Ministry of Manpower	1
(d)	One represents Goods Transport Company	1
(e)	One represents Bus Transport Company	1
(f)	Two by election from the staff and employees attached to the center	2
		7

During the life of the project the following will serve on the Board in a non-voting advisory capacity:

(g)	USAID Project Officer	1
(h)	Contractor Chief of Party	1

FUNCTIONS & DUTIES

(a) Determining the training year (starting and ending).

(b) Number of trainees to be accepted yearly.

(c) Scheduling all types of examinations (entering, promotion, and final) and the level of passing them.

(d) Approving all the internal systems and rules.

(e) Following up the activity of the center by the policy which will be laid down by the Board.

(f) Decide on annual balance sheet and the budget

(g) Approve the organizational chart of the center and any modifications that may occur.

(h) Approve expenses up to a certain amount (for purchasing or contracting). Either will be determined by the financial system.

(i) Responsible for the training policy in general and the efficient operation of the center to achieve its goals.

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POSITION: Chairman

Functions & Responsibilities

a. Preside over the Board of Directors

b. Forward the invitations to the members of the Board's meeting

c. Approve the memorandums passed to the Board

d. Entitled to approve expenses up to a certain amount. (This will be determined by the financial system).

e. Approve delegation, borrowing, appointment and missions required for the center staff employees or workers.

f. Sign contracts on behalf of the center

g. Represent the center legally

h. Carry-out the decisions of the Board

i. Punishing the staff and personnel after investigations (according to the punishment act which will be established).

POSITION: Director (he works under the supervision of the Chairman).

Functions and Responsibilities

a. Responsible for carrying-out and performing his daily duties to run the center efficiently in every respect.

b. He is assigned to look after all the personnel and training staff and to approve their normal leaves according to the work conditions and to delegate replacements in case of personnel or staff absence.

c. He is entitled to decide and approve expenses and give incentive and reward those who deserve to be encouraged immediately up to a certain amount (according to the administrative system).

d. He is allowed to punish after making the necessary investigations for the staff and personnel up to _____days discount (according to internal adm. system and the punishment act which will be established.

e. Responsible for the proper execution of discipline, cleanliness, quietness, and the good appearance of the center.

f. Sign the second signature of the checks.

g. Decide the way of purchasing according to his authorization of purchasing.

h. Form committees to work upon certain subjects.

i. Order the daily petty expenses up to a certain amount.

j. Responsible for security and he should take measures for safeguarding the building and all properties inside it.

k. Make reports on the activity of the center and remedy immediately any deviations which may appear or pass it to the highest level with his comments and remarks. A report should be made monthly with the analysis required and the opinion of the Director; this report should pass to the Board of Directors through the Chairman who adds his comments and remarks to be discussed by the Board.

All memorandums of the subjects to be decided by the Board of Directors should be prepared and established by the Director and should be passed to the Board through the Chairman. He is considered the link between the center and the other directions, i.e. the trainee's parents, the dealers, the Board of Directors and the others; in this connection he will be involved with interviews and meetings.

POSITION: Chief of Financial Sections. He works under the supervision of the Director

Functions & Repsonsibilities:

a. Controls all sections under his supervision

b. Follows-up the daily work of the following sections. Property Section, Financial Section, Purchasing Section, Storing Section

c. Responsible for all revenues and expenditures and sanctions the documents

d. Checks the statement of accounts and balance in the bank with the accounts recorded in the books of the center and makes the corrections or any other suitable steps needed.

e. Revises the annual budget and balance sheet and submits it to the Director to take its circle in due time with all details required.

f. Issues checks to payees and signs them initially.

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g. Signs all purchasing orders after the entitled authority has approved the memo of purchasing according to its amount

h. Approves all terms and conditions of tenders and suggests the way of purchasing to the Director (tender, direct bargaining, etc.) to the amount in his power of authority for purchasing.

i. Keeps securities and documents in safe places and well arranged.

j. Designs and establishes the forms needed for the work to realize simplicity and expedition.

k. Supervises the annual inventory and suggests the committees concerned with this purpose and he has to follow-up the results and make the necessary steps according to the storing and purchasing regulations

l. Suggests the storing and purchasing regulations.

m. Looks after the fixed and current assets and all the belongings of the center.

POSITION: Chief of Administration Sections. He works under the supervision of the Director.

Functions & Responsibilities

a. Controls all sections under his supervision.

b. Follows-up the daily work of the following sections:

- General Affairs Section
- Trainees Affairs Section
- Personnel and Training Staff Section
- Service Section

c. Responsible for all the procedures relating to the personnel and staff working in the center and attached to it by different means.

d. Suggests the punishment set for employees and the administrative system and any modifications needed according to their practical application.

e. Presides over the employees affairs committee.

f. Follows-up the annual reports of the employees (according to the stipulations of the ad. system).

g. Responsible for the security of the building, the services, the medical care, the public relations, and has to make good coordination between all these services.

h. Supervises the attendance of employees and others.

i. Responsible for processing training applications.

j. Keeps documents belonging to employees and trainees in safe places.

k. Gives code for the sections of the center to be used in correspondence and all the piles of the different subjects should be given code numbers for easiness of reference.

l. Designs and establishes the forms needed for the work to realize simplicity.

m. Approves the salaries, allowances, incentives, and others due to employees, training staff, and trainees before the revision of the finarcial section.

POSITION: Chief of Training Sections. He works under the supervision of the Director.

Functions and Responsibilities

a. Controls all sections under his supervision.

b. Follows-up the daily work of the following sections:

- Planning and follow-up section
- Equipment and buildings maintenance section
- Education and training organizational section

c. Responsible for carrying out the curricula and practical training according to the scheduled plan.

d. Suggests the punishment act for trainees and the trainee system and any modifications needed according to the practical application.

e. Responsible for the good relations with the companies and others dealing with the center in connection with training and he should create the link and maintain the relations with them.

f. Follows-up the monthly reports of the trainees.

g. Responsible for the maintenance of the building, equipment and furniture of the center.

h. Suggests training aids.

i. Responsible for the preparations and arrangements of shops and classrooms to suit training purposes.

j. Supervises the library and recommends the books to be bought and magazines and periodical subscriptions.

k. Follows the graduates in their work and studies their capabilities and perceptions of the work.

l. Estimates the needs of the transport sector or other sectors either belonging to the public or private sector from the trainees for the different systems of training carried out by the training center.

m. Designs and establishes forms required for the training, either practical or theoretical.

n. Establishes the time-table for training.

POSITION: Chief of Property Section. He is under the supervision of the Chief of Financial Sections.

Functions and Responsibilities

a. Keeps files of those who are taking any articles possessed by the center as consignment.

b. He should keep sheets of the circulated articles up to date for the easiness of obtaining any information in regard to the consignments in possession of any person.

c. He should give an annual report about all articles in possession of personnel, trainees an others for the purposes of the annual inventory.

d. Signs a declaration listing the possessions belonging to the center.

e. Keeps records in books for all the fixed and current assets. He should mention their purchasing, scrapping, or selling dates. The items should be classified in identical groups for easiness of the application of the annual depreciation.

Position: Chief of Financial Section. He is under the supervision of the Chief of the Financial Sections

Functions and Responsibilities

a. Keeps books for recording the different financial deals (debtors, creditors, ledger books, revenues, and expenditures).

b. Revises all documents of expenditures or revenues and realizes their correctness and completion.

ANNEX 10(g)
VEHICLE MAINTENANCE TRAINING
PROJECT 263-0114
Project Paper - GSLT

TRAINING PROGRAMS

USAID Training Inputs:

To develop the numbers, kinds and qualities of specialized instructors required, USAID will provide the following training programs in the U.S.. Note that the specific instructors to attend each program are identified.

Program #1. ELECTRICAL
(For instructors SSI-4 and STI-8)

1. 90 hours teaching techniques course
2. 20 hours visual aids course
3. 40 hours automotive electrical course (factory school)
4. 40 hours automotive electrical trouble shooting course (factory school)
5. 40 hours in an electrical repair shop
6. 40 hours at a technical trade school.

Program #2. AIR CONDITIONING/HYDRAULICS
(For instructors SSI-7 and STI-4)

1. 90 hours teaching technique course
2. 20 hours visual aids course
3. 40 hours automotive air conditioning repair course (factory school)
4. 40 hours hydraulic course (factory school)
5. 40 hours in a hydraulic repair shop
6. 40 hours in an air conditioning repair sho
7. 40 hours at a technical trade school

Program #3. MACHINE SHOP
(For instructors SSI-5 and STI-5)

1. 90 hours teaching techniques course
2. 20 hours visual aids course
3. 80 hours in an automotive machine shop
4. 40 hours at a technical trade school

Program #4. SHEETMETAL
(For instructors STI-9 and B1-2)

1. 90 hours teaching techniques course
2. 20 hours visual aids course
3. 40 hours sheetmetal layout course
4. 40 hours at a sheetmetal shop
5. 40 hours at a technical trade school

Program #5. DIESEL ENGINE
(For instructors SSI-2, STI-1 and STI-6)

1. 90 hours teaching techniques course
2. 20 hours visual aids course
3. 40 hours diesel fuel injection repair and testing course (factory school)
4. 120 hours diesel engine repair course (factory school)
5. 40 hours diesel engine trouble shooting course (factory school)
6. 20 hours working in the dynamometer room (factory school on model purchased).
7. 40 hours at a bus repair facility (repair operation/records procedure)
8. 40 hours at a diesel engine technical school.

Program #6. FRONT-END ALLIGNMENT
(For instructors SSI-3 and STI-3)

1. 90 hours teaching techniques course
2. 20 hours visual aids course
3. 40 hours hydraulic brakes course (factory school)
4. 40 hours air brakes course (factory school)
5. 40 hours steering system course (power/standard factory school)
6. 40 hours front-end alignment course (factory school on model purchased)
7. 40 hours at a brake and front end repair facility
8. 40 hours at a technical school

Program #7. TRANSMISSION/DIFFERENTIAL
(For instructors BI-1 and BI-5)

1. 90 hours teaching techniques course
2. 20 hours visual aids course
3. 40 hours automatic transmission course (factory Allison)
4. 40 hours differential repair course "all types" (factory school)
5. 20 hours transmission trouble shooting and testing (factory school Allison
6. 40 hours in a transmission repair facility
7. 40 hours at a technical trade school.

Program #8. WELDING
(For instructors SSI-6 and STI-2)

1. 90 hours teaching techniques course
2. 20 hours visual aids course
3. 80 hours gas welding course
4. 80 hours electric welding course (at factory on model purchased)
5. 40 hours blacksmith course
6. 40 hours in a welding shop
7. 40 hours at a technical trade school.

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Program # 9. BODY/FENDER
(For instructors SSI-8 and BI-3)

1. 90 hours teaching techniques course
2. 20 hours visual aids course
3. 80 hours body/fender course
4. 40 hours at a body repair shop/frame straighting (heavy truck repair)
5. 40 hours at a technical trade school.

Program #10. PREVENTIVE MAINTENANCE AND PARTS EXPEDITER
(For instructors SSI-1, STI-7 and BI-4)

1. 90 hours teaching techniques course
2. 20 hours visual aids course
3. 40 hours preventive maintenance course (factory school)
4. 40 hours in a bus repair facility (pm section)
5. 40 hours in a bus repair facility (maintenance operation/records procedures)
6. 80 hours at a parts warehouse (handling/stocking/records/procedures)
7. 40 hours at a technical trade school.

Sixteen person weeks of English language training will be provided for each of the 25 participants prior to departure for U.S. training

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To assist in the development of the skills of the administrators of the CSLT, USAID will provide the following short-term training in the U.S..

Administrative Program #1
(For CSLT Director)

1. 120 hours at a technical trade school:
   a. 40 hours observing shop and classroom activities
   b. 80 hours working with school administrators.
2. 40 hours at a factory school
3. 40 hours at a bus maintenance facility

Administrative Program #2
(For CSLT Assistant Ditector for Programs)

1. 120 hours at a technical trade school
2. 80 hours at a factory school
3. 40 hours at a truck maintenance facility
4. 40 hours at a bus maintenance facility

Administrative Program #3
(For CSLT Assistant Director for Support Services)

1. 120 hours at a technical trade school
2. 40 hours at a bus manufacturing company
3. 40 hours at a truck manufacturing company

ANNEX 10(h)

VEHICLE MAINTENANCE TRAINING
PROJECT 263-0114
Project Paper - GSLT

TECHNICAL ASSISTANCE

USAID Technical Assistance Inputs

To assist in the development of the GSLT Training Center, USAID will provide the following technical assistance inputs:

TA-1 Shop Layout and Equipment Specialist...(1 man, 5 man months)

Responsible for:

1. review of building plans;
2. review of equipment lists;
3. development of shop layout plans;
4. supervision of equipment installation;

TA-2 Curriculum Development Team...(3 man team, 15 man months)

Responsible for development of detailed curriculum for all courses to be taught at GSLT:

C-1. The Training Center
C-2. Shop Procedures
C-3. Automotive Tools/Equipment
C-4. Preventive Maintenance
C-5. Diesel Engine
C-6. Electrical System (Basic)
C-7. Electrical Systems (Speciality)
C-8. Transmission/Differential
C-9. Steering Systems
C-10. Wheel Alignment
C-11. Diesel Fuel Injection
C-12. Basic Hydraulics
C-13. Hydraulics (Speciality)
C-14. Automotive Brakes (Speciality)
C-15. Gas and Electric Arc Welding
C-16. Emergency Road Service
C-17. Automotive Machine Shop
C-18. Automotive Sheetmetal (Speciality)
C-19. Blacksmithing (Speciality)
C-20. Automotive Metal Shop (Speciality)
C-21. Automotive Radiator Repair
C-22. Upholstry (deleted)
C-23. Automotive Air-Conditioning
C-24. Supply Room Procedures
C-25. Supervision
C-26. Tire Repair (deleted)

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TA-3 Trainer/Instructors

(1) Preventive Maintenance Specialist.....(1 man, 4 man months)
(c-4)

(2) Diesel Engine Specialist.....(1 man, 8 man months)
(c.5,11)

(3) Front-end, Steering, Brakes 5 Specialist...(1 man, 5 man months)
(c-9,10,14)

(4) Electrical Specialist.....(1 man, 9 man months)
(c-6,7)

(5) Machine Shop Specialist.....(1 man, 4 man months)
(c-17)

(6) Blacksmith Welding Specialist.....(1 man, 4 man months)
(c-15,19,2)

(7) Power Train Specialist.....(1 man, 4 man months)
(c-8)

(8) Hydraulics, Air Conditioning Specialist..(1 man, 8 man months)
(c-12,13,23)

(9) Body, Sheet Metal Specialist..... (1 man, 4 man months)
(c-18,20)

Each Trainer/Instructor will be responsible for:

1. Curriculum development in respective course areas;
2. Evaluation and development of instructional materials;
3. Upgrading GSLT instructor teaching skills;
4. Assisting GSLT instructors in teaching courses;
5. Development of appropriate instruments to evaluate trainee progress in relation to learning objectives;
6. Advising GSLT Advisory Committee in relevant areas.

TA-4 Technical School Administration Specialist..(1 man, 30 man months)

Will be chief of party, work directly with the GSLT Director and be responsible for:

1. Developing a facility management plan.
2. Designing and implementing a personnel development plan.
3. Defining duties, responsibilities and relationships of teachers, administrators and support personnel.

4. Designing a system for selecting faculty.
5. Establishing an effective record keeping and reporting system.
6. Developing a system for supervision, evaulation and feedback of staff effectiveness in order to enhance communications and program quality.
7. Planning orientation system for introducing new teachers and other personnel.
8. Involving students and faculty in developing and implementing a system to encourage student participation in school governance and enhance communication between students, faculty and administration.
9. Assisting faculty in establishing advisory committees.
10. Developing a plan for accumulating appropriate manpower data concerning on-going needs for heavy vehicle mechanics
11. Developing a follow up study program to ascertain placement data and program effectiveness.
12. Establishing the school admission and exit criteria.
13. Providing on-the-job training for the GSLT Director.

TA-5 Technical Program Specialist....(1 man, 30 man months)

Will work directly with GSLT Assistant Director for Programs

and be responsible for:

1. Insuring that all shops are kept up to standards and are properly equipped.
2. Assisting in establishing advisory committees and provide guidance in their development and function
3. Assisting in developing shop organizational and management plans.
4. Assisting in upgrading the skills of the staff.
5. Assisting in establishing admission and exit criteria
6. Assisting in developing a program to evaluate students progress in relation to performance objectives.
7. Maintaining contact with technical representatives of the engine and heavy vehicles companies.
8. Providing on the job training for the Assistant Director for Programs.

USAID will also provide 19 person weeks of contract evaluation consultants during the course of the project (see Section IV, 9).

INSTUCTIONAL HARDWARE

UNIT	NAME	UNIT PRICE	TOTAL $
18 ea.	Blackboard	50.00	900.00
7 ea.	Overhead projector 10-1/2" complete with side table,roller assembly 4 spare lamps ea.	190.00	1,330.00
7 ea.	Super 8MM loop projector with 2 spare lamps ea.	199.00	1,393.00
7 ea.	Desk top viewer for super 8MM film loops with 2 spare lamps ea.	40.00	280.00
2 ea.	Stan-Matic strip film projector W/stand and 2 spare lamps ea.	510.00	1,020.00
2 ea.	16MM sound projector with 2 spare lamps	1,035.00	2,070.00
1 ea.	Transparency maker (3M copier) with 2 spare lamps	590.00	590.00
7 ea.	35MM slide projector with 2 spare lamps ea.	125.00	875.00
7 ea.	Cassette player	40.00	280.00
9 ea.	Projection screen (wall mount)	88.00	792.00
2 ea.	Projection screen (portable)	50.00	100.00
7 ea.	Mobile equipment table 34" high	50.00	350.00
9 ea.	Demonstration table	276.00	2,484.00
9 ea.	Storage cabinet for A.V.	150.00	1,350.00

TOTAL $13,814.00*

A. Personnel required for the previously mentioned offices and sections : 16

B.

Supporting Staff	Secretary	Clerk	Typist	
1. Chairman's office	-	1	1	
2. Director's office	1	1	1	
3. Chief of financial sections	1	-	-	
4. Chief of administrative sections	1	-	-	
5. Chief of training sections	1	-	-	
6. Property section	-	1	-	
7. Financial section	-	2	1	
8. Purchasing section	-	2	1	
9. Store section "including library"	-	4	-	
10. General affairs section "excluding doctor and nurse"	-	3	1	
11. Trainees affairs section	-	2	1	
12. Employees affairs section "excluding instructors"	-	2	1	
13. Service section	-	1	-	
14. Planning and follow-up section	-	2	2	
15. Maintenance section	-	1	-	
16. Educational and training organizational section	-	2	2	
Sub totals	4	24	11	= 39

C. Technicians:

Fitters	2
Mechanics	2
Electricians for motors and installations	2
Carpenters	2
Sub total	8

D. Other Staff.

Doctor (part time)	1
Nurse	1
Instructors	44
Sub total	46

E. Laborers

Guards (watchmen) (3 for each shift)	9
General Laborers:	
For the shops	10
For the rooms	8
Reserve	2
Janitors	6
Telephonist	2
Firemen	2
Sub total	39

Grand total	148

ANNEX 10(i)
VEHICLE MAINTENANCE TRAINING
PROJECT 263-0114
Project Paper - GSLT

EQUIPMENT, TOOLS AND TRAINING AIDS

SHOP	COURSE	COURSE NUMBER	COST	TOTAL COST
5-1	Automotive	C-3	4,058	
	Preventive Maintenance	C-4	24,768	$ 28,826
5-2	Diesel Engine Mechanics	C-5	100,896	
	Fuel Injection	C-11	22,866	123,762
5-3	Steering Systems	C-9	16,433	
	Wheel Alignment	C-10	10,477	
	Brake Systems	C-14	13,690	40,580
5-4	Electrical	C-6,7		34,373
5-5	Machine	C-17		184,217
5-6	Welding	C-15	50,978	
	Blacksmith	C-19	16,582	67,560
5-7	Transmissions, Differentials, Axles	C-8	35,231	
	Hydraulics	C-12, 13	12,455	
	Air Conditioning	C-23	7,433	55,119
5-8	Sheetmetal	C-18	39,849	
	Auto Body	C-20	8,873	48,722
	Road Service Mechanics	C-16		89,000
	Sub-Total			$672,159
	Instructional Hardware		13,814	
	Furniture		59,105	
	Other Support Equipment		26,760	
	Spare Parts		142,730	242,409
			BASE COST (1979 Prices)	$914,568

VEHICLE MAINTENANCE
TRAINING IN EGYPT
PROJECT 263-0114

ANNEX 11

PROJECT GRANT AGREEMENT

PROJECT NUMBER 263-0114

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PROJECT

GRANT AGREEMENT

BETWEEN

THE ARAB REPUBLIC OF EGYPT

AND

THE UNITED STATES OF AMERICA

FOR

VEHICLE MAINTENANCE TRAINING

DATED: July 21, 1980

ANNEX 1

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PROJECT GRANT

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A.I.D. PROJECT NUMBER 263-0114

Project Grant Agreement

Dated: July 21, 1980

Between

The Arab Republic of Egypt ("Grantee")

And

The United States of America, acting through the Agency for International Development ("A.I.D.").

Article 1: The Agreement

The purpose of this Agreement is to set out the understandings of the parties named above ("Parties") and the Ministry of State for Manpower and Vocational Training, Ministry of Transport, Communications and Maritime Transport, and the General Syndicate for Land Transport ("GSLT") as implementing organizations, with respect to the undertaking by the Grantee of the Project described below and with respect to the financing of the Project by the parties.

Article 2: The Project

SECTION 2.1. Definition of Project. The Project, which is further described in Annex 1, will assist the Grantee to develop an effective heavy-vehicle-maintenance training center which will upgrade skills and improve work habits of mechanics, thereby increasing the efficiency of vehicle maintenance systems and improving the quality of bus and truck transport services to the public.

Within the limits of the above definition of the Project, elements of the amplified description stated in Annex 1 may be changed by written agreement of the authorized representatives of the parties named in Section 8.2, without formal amendment of this Agreement.

Article 3: Financing

SECTION 3.1. The Grant. To assist the Grantee to meet the costs of carrying out the Project, A.I.D., pursuant to the Foreign Assistance Act of 1961, as amended, agrees to grant the Grantee under the terms of this Agreement not to exceed Four Million Five Hundred Thousand United States ("U.S.") Dollars ($4,500,000) ("Grant").

The Grant may be used to finance Foreign Exchange Costs, as defined in Section 6.1, and Local Currency Costs, as defined in Section 6.2, of goods and services required for the Project, except that, unless the parties otherwise agree in writing, Local Currency Costs financed under the Grant will not exceed the Egyptian Pound equivalent of Six Hundred Thousand U.S. Dollars ($600,000).

SECTION 3.2. Grantee Resources for the Project.

(a) The Grantee agrees to provide or cause to be provided for the Project all funds, in addition to the Grant, and all other resources required to carry out the Project effectively and in a timely manner.

(b) The resources provided by Grantee for the Project will be not less than the Egyptian Pound equivalent of Two Million Four Hundred Thousand U.S. Dollars ($2,400,000), including costs borne on an "in-kind" basis.

SECTION 3.3. Project Assistance Completion Date.

(a) The "Project Assistance Completion Date" (PACD), which is June 15, 1984, or such other date as the parties may agree to in writing, is the date by which the parties estimate that all services financed under the Grant will have been performed and all goods financed under the Grant will have been furnished for the Project as contemplated in this Agreement.

(b) Except as A.I.D. may otherwise agree in writing, A.I.D. will not issue or approve documentation which would authorize disbursement of the Grant for services performed subsequent to the PACD or for goods furnished for the Project, as contemplated in this Agreement, subsequent to the PACD.

(c) Requests for disbursement, accompanied by necessary supporting documentation prescribed in Project Implementation Letters, are to be received by A.I.D. or any bank described in Section 7.1 no later than nine (9) months following the PACD, or such other period as A.I.D. agrees to in writing. After such period, A.I.D., giving notice in writing to the Grantee, may at any time or times reduce the amount of the Grant by all or any part thereof for which requests for disbursement, accompanied by necessary supporting documentation prescribed in Project Implementation Letters, were not received before the expiration of said period.

Article 4: Conditions Precedent to Disbursement

SECTION 4.1. First Disbursement. Prior to any disbursement or to the issuance by A.I.D. of documentation pursuant to which disbursement will be made, the Grantee will, except as the parties may otherwise agree in writing, furnish to A.I.D. in form and substance satisfactory to A.I.D.

(a) A statement of the names and title with specimen signatures of the person or persons who will act as the representatives of the Grantee;

(b) Evidence that the GSLT has been given full responsibility and authority for implementation of the Project.

(c) Evidence of the establishment of a Board of Directors which will direct implementation of the Project and administer the training center (the "Board"), and evidence that representatives of Ministry of State for Manpower and Vocational Training, GSLT, the Ministry of Transport, Communications and Land Transport, participating companies and the training center will serve on the Board.

(d) Such other documentation and information as A.I.D. may reasonably require.

SECTION 4.2. Notification. When A.I.D. has determined that the Conditions Precedent specified in Sections 4.1 have been met, it will promptly notify the Grantee.

SECTION 4.3. Terminal Date for Conditions Precedent. If all of the conditions specified in Section 4.1 have not been met within 120 days from the date of this Agreement or such later date as A.I.D. may agree

to in writing, A.I.D., at its option, may terminate this Agreement by written notice to Grantee.

Article 5: Special Covenants

SECTION 5.1. Project Evaluation. The parties agree to establish an evaluation program as part of the Project. Except as the parties otherwise agree in writing, the program will include, during the implementation of the Project and at one or more points thereafter: (a) evaluation of progress toward attainment of the objectives of the Project; (b) identification and evaluation of problem areas or constraints which may inhibit such attainment; (c) assessment of how such information may be used to help overcome such problems; and (d) evaluation, to the degree feasible, of the overall development impact of the Project.

SECTION 5.2. Project Implementation. The Grantee shall:

(1) Carry out the Project with due diligence and efficiency and in conformity with sound engineering, construction, financial, administrative and other professional practices.

(2) Cause the Project to be carried out in conformance with all the plans and specifications, including all modifications therein approved by A.I.D. pursuant to the Agreement, and shall provide, on a timely basis, necessary local currency and in-kind support as specified in this Agreement and its annexes.

SECTION 5.3. Cooperation of the Parties. The Grantee shall cooperate fully with A.I.D. to assure that the purpose of the Grant will be accomplished. The Grantee and A.I.D. shall from time to time, at the request of either party, exchange views through their representatives with regard to the progress of the Project, the performance of the consultants, contractors and suppliers engaged on the Project and other matters relating to the Project.

SECTION 5.4. Incentive Payments. The Grantee shall make provision for adequate administrative arrangements and local currency from funds other than those provided by this Grant for any incentive payments to be made to personnel of the Grantee or trainees engaged in the implementation of the Project.

SECTION 5.5. Additional Covenants. The Grantee shall:

(a) Provide a detailed instructor salary scale and incentive plan for the training center staff, showing a base salary of L.E. 80, and minimum total incentives of L.E. 80.

(b) Agree to train on-the-job a minimum of twenty-two instructors in addition to the twenty-two who will receive training in the United States.

(c) Execute agreements with participating companies that they will pay employees their base salaries while they attend the GSLT training center.

(d) Provide copies of all training agreements signed between the Board and bus and truck companies who participate in the Project. The

training agreements will specify the number of trainee spaces allocated to each company and the amount of each company's financial contribution toward operating costs of the training center.

(e) Endeavor to include women as participants in the Project.

Article 6: Procurement Source

SECTION 6.1. Foreign Exchange Costs. Disbursements pursuant to Section 7.1 will be used exclusively to finance the costs of goods and services required for the Project having their source and origin in the United States (Code 000 of the A.I.D. Geographic Code Book as in effect at the time orders are placed or contracts entered into for such goods or services) ("Foreign Exchange Costs"), except as A.I.D. may otherwise agree in writing, and except as provided in the Project Grant Standard Provisions Annex, Section C.1(b) with respect to marine insurance.

SECTION 6.2. Local Currency Costs. Disbursements pursuant to Section 7.2 will be used exclusively to finance the costs of goods and services required for the Project having their source and, except as A.I.D. may otherwise agree in writing, their origin in Egypt ("Local Currency Costs").

Article 7: Disbursement

SECTION 7.1. Disbursement for Foreign Exchange Costs.

(a) After satisfaction of conditions precedent, the Grantee may obtain disbursements of funds under the Grant for the Foreign Exchange

Costs of goods or services required for the Project in accordance with the terms of this Agreement, by such of the following methods as may be mutually agreed upon:

(1) by submitting to A.I.D., with necessary supporting documentation as prescribed in Project Implementation Letters, (A) requests for reimbursement for such goods or services, or (B) requests for A.I.D. to procure commodities or services in Grantee's behalf for the Project; or

(2) by requesting A.I.D. to issue Letters of Commitment for specified amounts (A) to one or more U.S. banks, satisfactory to A.I.D., committing A.I.D. to reimburse such bank or banks for payments made by them to contractors or suppliers, under Letters of Credit or otherwise, for such goods or services, or (B) directly to one or more contractors or suppliers, committing A.I.D. to pay such contractors or suppliers for such goods or services.

(b) Banking charges incurred by Grantee in connection with Letters of Commitment and Letters of Credit will be financed under the Grant unless the Grantee instructs A.I.D. to the contrary. Such other charges as the parties may agree to may also be financed under the Grant.

SECTION 7.2. Disbursement for Local Currency Costs.

(a) After satisfaction of conditions precedent, the Grantee may obtain disbursements of funds under the Grant for Local Currency Costs required for the Project in accordance with the terms of this Agreement,

by submitting to A.I.D., with necessary supporting documentation as prescribed in Project Implementation Letters, requests to finance such costs.

(b) The local currency needed for such disbursements may be obtained by acquisition by A.I.D. with U.S. Dollars by purchase. The U.S. dollar equivalent of the local currency made available hereunder will be the amount of U.S. dollars required by A.I.D. to obtain the local currency.

SECTION 7.3. Rate of Exchange. Except as may be more specifically provided under Section 7.2, if funds provided under the Grant are introduced into Egypt by A.I.D. or any public or private agency for purposes of carrying out obligations of A.I.D. hereunder, the Grantee will make such arrangements as may be necessary so that funds may be converted into currency of the Arab Republic of Egypt at the highest rate of exchange prevailing and declared for foreign exchange currency by the competent authorities of the Arab Republic of Egypt.

SECTION 7.4. Other Forms of Disbursement. Disbursements of the Grant may also be made through such other means as the parties may agree to in writing.

Article 8: Miscellaneous

SECTION 8.1. Communications. Any notice, request, document, or other communication submitted by A.I.D. or the Grantee to the other under this Agreement will be in writing or by telegram or cable, and will be

deemed duly given or sent when delivered to such party at the following addresses:

To the Grantee:

Ministry of Economy
8 Adly Street
Cairo Egypt

Ministry of Transport, Communications and Maritime Transport
Sharia Kasr El Eini
Cairo Egypt

Ministry of State for Manpower and Vocational Training
Sharia Youssef Abbas
Medinet Nasr
Cairo Egypt

General Syndicate for Land Transport
90 Sharia Galaa
Cairo Egypt

To A.I.D.:

A.I.D.
U.S. Embassy
Cairo Egypt

All such communications will be in English or Arabic, unless the Parties otherwise agree in writing. Other addresses may be substituted for the above upon the giving of notice.

SECTION 8.2. Representatives. For all purposes relevant to this Agreement, the Grantee will be represented by the individuals holding or acting in the offices of Minister of Economy, Minister of State for Manpower and Vocational Training, Minister of Transport, Communications and Maritime Transport, President of the General Syndicate for Land Transport, and A.I.D. will be represented by the individual holding or acting in the Office of Director, USAID, each of whom, by written notice, may designate additional representatives for all purposes other than exercising the power under Section 2.1 to revise elements of the amplified description

in Annex 1. The names of the representatives of the Grantee, with specimen signatures, will be provided to A.I.D., which may accept as duly authorized any instrument signed by such representatives in implementation of this Agreement, until receipt of written notice of revocation of their authority.

SECTION 8.3. Standard Provisions Annex. A "Project Grant Standard Provisions Annex" (Annex 2) is attached and forms part of this Agreement.

IN WITNESS WHEREOF, the Grantee and the United States of America, each acting through its duly authorized representative, have caused this Agreement to be signed in their names and delivered as of the day and year first above written.

ARAB REPUBLIC OF EGYPT	UNITED STATES OF AMERICA
BY:	BY:
NAME: Dr. Abdel Razzak Abdel Moguid	NAME: Donald S. Brown
TITLE: Deputy Prime Minister for Economic & Financial Affairs & Minister of Planning, Finance and Economy	TITLE: Director USAID/Cairo

Implementing Organizations

In acknowledgement of the foregoing Agreement, representatives of the implementing organizations have subscribed their names:

BEST AVAILABLE COPY

MINISTRY OF STATE FOR MANPOWER AND VOCATIONAL TRAINING

BY: _____

NAME: Mr. Saad Mohamed Ahmed

TITLE: Minister of State for Manpower and Vocational Training

GENERAL SYNDICATE FOR LAND TRANSPORT

BY: _____

NAME: Mr. Mohamed Okeily

TITLE: President

MINISTRY OF TRANSPORT, COMMUNICATIONS AND MARITIME TRANSPORT

BY: _____

NAME: Mr. Soliman Metwalli

TITLE: Minister of Transport, Communications and Maritime Transport

I. Project Objectives - The Project will upgrade the skills and improve the work habits of vehicle maintenance workers in key vehicle maintenance occupational areas in order to increase the efficiency of transportation maintenance systems, thereby improving the quality of bus and truck transport services provided to the public. In order to achieve this objective, a heavy vehicle maintenance training center will be established in the Mataria District of Cairo (the "Center"). The Center will be owned and operated by the GSLT and will serve the training needs of the nine major public sector bus and truck transport companies, which currently employ over 5,000 maintenance mechanics. When fully operational, the Center will provide training for approximately 540 trainees per year.

Although the Project will emphasize upgrading the skills of employed mechanics, apprenticeship and accelerated training will also be provided for new employees.

II. Outputs - During the course of the Project the planned outputs include trained administrators, trained instructors (22 trained in the U.S. and 22 trained on-the-job), curricula for courses and programs, shop complexes for Center programs, equipped classrooms, an administrative procedures plan; and an instructional procedures plan.

III. Inputs - The following Project inputs are planned:

A. Financed by A.I.D.

1. Technical Assistance. The Project will include approximately 5 person-years of long-term technical expertise, and approximately 5.8 person-years of short-term technical supervisory services. A total of 19 person-weeks of Project evaluation contract services are also proposed.

2. Participant Training. Short-term training programs will be conducted in U.S. factory schools, vocational technical institutions and in bus or truck maintenance facilities. A total of 9.2 person-years of training is planned for three administrators and 22 instructors. Prior to their departure for the U.S., the 25 participants will each receive appropriate English language training.

3. Commodities. The Project will provide the equipment, machinery, tools, training aids and materials required to implement the program.

B. Financed by the GOE and GSLT:

1. Physical facilities.

2. Land.

3. Personnel staffing.

4. Other operating costs.

IV. Project Strategy

A. Curriculum. The design of courses and development of appropriate curricula is an essential element in the Project. Basic course outlines and training programs which were developed by the Project design team will be further detailed and refined by the implementation contractor. Short-term technical assistance will be provided by a curriculum-design team during the first year of Project activity for the specific task of curriculum development. To insure that all equipment, tools and training aids are of the type required to implement the curriculum, the activities of this team will be closely coordinated with the activities of the shop layout/equipment specialist, whose services will also be financed by the Project. Further refinements in the curricula will be made throughout the Project by additional consultants as well as by the 22 instructors after they have completed their training in the United States.

B. Physical Facility. The GSLT will provide the physical plant in which the Center is housed. Costs of design and construction of the Center are being financed by the GSLT. Adequate space will be provided for eight shop complexes, nine classrooms, laboratories, a lecture hall, administrative facilities, offices and storage space. Finishing details such as location of drains, air hoses, equipment pads, lights and electrical outlets will depend on the final location of equipment within the shops. The shop layout/equipment specialist will provide technical advice in this regard.

C. Commodities. Basic lists of equipment, tools, training aids and other furnishings were developed by the Project design team. These lists need to be refined by the contractor and detailed specifications written. For about two months at the beginning of the Project the shop layout/equipment specialist will assist in developing detailed shop layout plans, determining equipment needs, and writing specifications. The contractor will be responsible for procurement of all project commodities. When commodities arrive at the Center, near the end of the first year of the Project, the specialist will return for a second consultancy of three months to supervise equipment installation.

D. Instructors. During the second and third years of the Project, instructor qualifications will be further upgraded through on-the-job training provided by both long- and short-term advisors. The Project provides for the long-term services of a training specialist, as well as, for the short-term technical services of nine trainers. The training specialist will have a two-year assignment while the consultancies of the trainers will range from four to nine months. A major task of the long-term training specialist will be the development of a comprehensive instructional procedures plan to guide the technical operations of the Center.

E. Administrators. To develop GSLT administrative capabilities and establish efficient administrative procedures, the Project provides both technical assistance and participant training. Technical assistance will be provided by an administration specialist for approximately three years during the life of the Project. This consultant will work directly with the Center Director and will serve as the contractor's chief of party. In addition, a total of 20 person-months of short-term U.S. training will be provided for three GSLT instructors. Administrative training programs will be conducted in vocational technical schools and in heavy-vehicle-maintenance facilities.

V. Financial Plan - An overall illustrative financial plan for the Project is set forth in the following table. Within the overall budget total, line items shown in the table may be increased or decreased by mutual agreement of the parties for the benefit of the Project.

SUMMARY OF COST ESTIMATES AND FINANCIAL PLAN

(All Figures in $000)

PROJECT: VEHICLE MAINTENANCE TRAINING

Number: 263-0114

	USAID			GOE			TOTAL		
	FX($)	LC(LE)	TOTAL	FX ($)	LC (LE)	TOTAL	FX ($)	LC (LE)	TOTAL
1. Technical Assistance	732.2	380.4	1,112.6	-	-	-	732.2	380.4	1,112.6
2. Participant Training	581.7	-	581.7	-	-	-	581.7	-	581.7
3. Commodities	1,200.4	-	1,200.4	-	-	-	1,200.4	-	1,200.4
4. Personnel	-	-	-	-	900.0	900.0		900.0	900.0
5. Other Operating Costs	-	-	-	-	225.0	225.0		225.0	225.0
6. Land	-	-	-	-	500.0	500.0		500.0	500.0
7. Physical Facilities	-	-	-	-	350.0	350.0	-	350.0	350.0
SUB-TOTAL	2,514.3	380.4	2,894.7	-	1,975.0	1,975.0	2,514.3	2,355.4	4,869.7
8. Overhead	553.6	-	553.6	-	-	-	553.6	-	553.6
9. Contract Fees	194.3	-	194.3	-	-	-	194.3	-	194.3
10. Inflation	423.4	145.5	568.9	-	225.7	225.7	423.4	371.2	794.6
11. Contingency	209.1	37.2	246.3	-	225.8	225.8	209.1	263.0	472.1
TOTAL	3,894.7	563.1	4,457.8	-	2,426.5	2,426.5	3,894.7	2,989.6	6,884.3

VI. Project Implementation - Five key organizations will be involved in the implementation of the Project: the Agency for International Development, Ministry of Manpower and Vocational Training ("MOM"), the General Syndicate for Land Transport ("GSLT"), a U.S. contractor which will work under a host-country contract with the GSLT and provide the technical assistance, participant training and commodity inputs required to implement the Project, and the participating Egyptian bus and truck transport companies.

The Board will sign a training agreement with each of the bus and truck transport companies that participates in the Project. The training agreement will specify the number of trainee spaces allocated to each company and the amount of each company's financial contribution toward covering the operating costs of the Center.

Project Monitoring and Evaluation

Four levels of monitoring and evaluation are anticipated:

1. Financial Monitoring.
2. Input/Output Monitoring.
3. Regular Evaluations.
4. Special Evaluations.

Financial Monitoring will insure that A.I.D. and GOE financial inputs are adequate and timely so that Project input targets may be achieved. Both the GSLT and the contractor will prepare and submit to

A.I.D. brief monthly statements of the status of Project implementation with respect to the achievement of Project input targets. More detailed reports will be submitted at three-month intervals. The GSLT, with the assistance of the contractor, will develop a regular system of accountability and audit for the financial accounts established under the Project.

Input/Output Monitoring will insure that Project inputs, particularly technical assistance, are directed toward the production of planned project outputs. The GSLT, with the assistance of the contractor will develop a detailed work plan for each consultant which will specify the quantitative and qualitative objectives of the consultancy and identify specific GSLT training center counterparts. The GSLT will submit consultant evaluation reports at the mid-point and end of each consultancy.

Evaluation - In evaluating the Project, USAID has two basic objectives. The first is to determine whether measures taken to establish a viable vehicular maintenance training center are timely and well conceived. The second objective is to determine whether the approved Project design continues to be the best means of attaining the Project's objectives. Two regular evaluations are scheduled to be undertaken in the twelfth and twenty-fourth monthsof the Project. These regular evaluations will be "in house" undertakings with A.I.D., contract, and GSLT personnel participating in the procedures.

In addition, two special evaluations will be undertaken during the project--one at the end of 18 months and the other at Project completion. The primary purpose of these special evaluations will be to determine the extent to which the Project has improved the quality of bus and truck transport services provided to the public and to judge the extent to which the Egyptian people have benefited from the improved transport services.