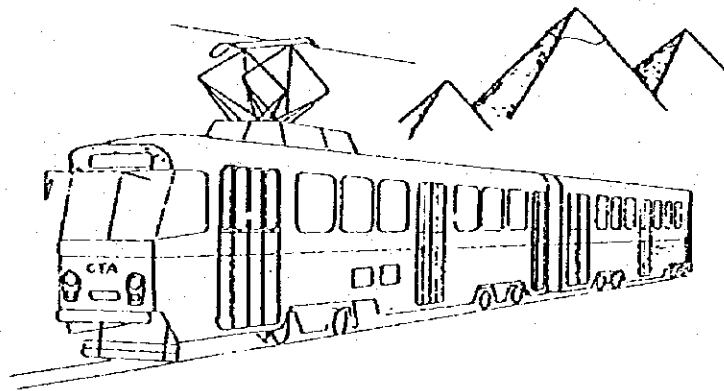


JAPAN — EGYPT TECHNICAL COOPERATION
CTA TRAMCAR TRAINING CENTER PROJECT

PROGRESS REPORT III

THE JAPANESE EXPERT TEAM



OCTOBER 1985

JAPAN INTERNATIONAL COOPERATION AGENCY

CAIRO TRANSPORT AUTHORITY

P R E F A C E

Rapid growth of the population in the Arab Republic of Egypt and its concentration into Cairo has demanded improvement of transportation facilities in the City. The Government of Egypt had requested to the Government of Japan a technical cooperation on establishing a tramcar training center for Cairo Transport Authority (CTA) in order to make it a mean to solve that situation.

Japan International Cooperation Agency (JICA), having received the request, dispatched a feasibility survey mission to Egypt in 1981, followed by an implementation survey mission in 1982, by which the current Record of Discussions on the Japanese technical cooperation for the CTA Tramcar Training Center Project was signed between CTA. Based on the Record of Discussions JICA started the implementation of the Project with dispatching a Japanese Expert Team in March 1983.

Further to the foregoing Progress Reports, the present third report contains a summary of the Team's activity from November 1984 and a tentative schedule up to the termination of the term of the Project.

The Team hopes that the report will contribute to further progress of the Project in a tight cooperation between the authorities concerned.

October 1985



Norihiko Saeaki
Team Leader
Chief Advisor
The Japanese Expert Team

C O N T E N T S

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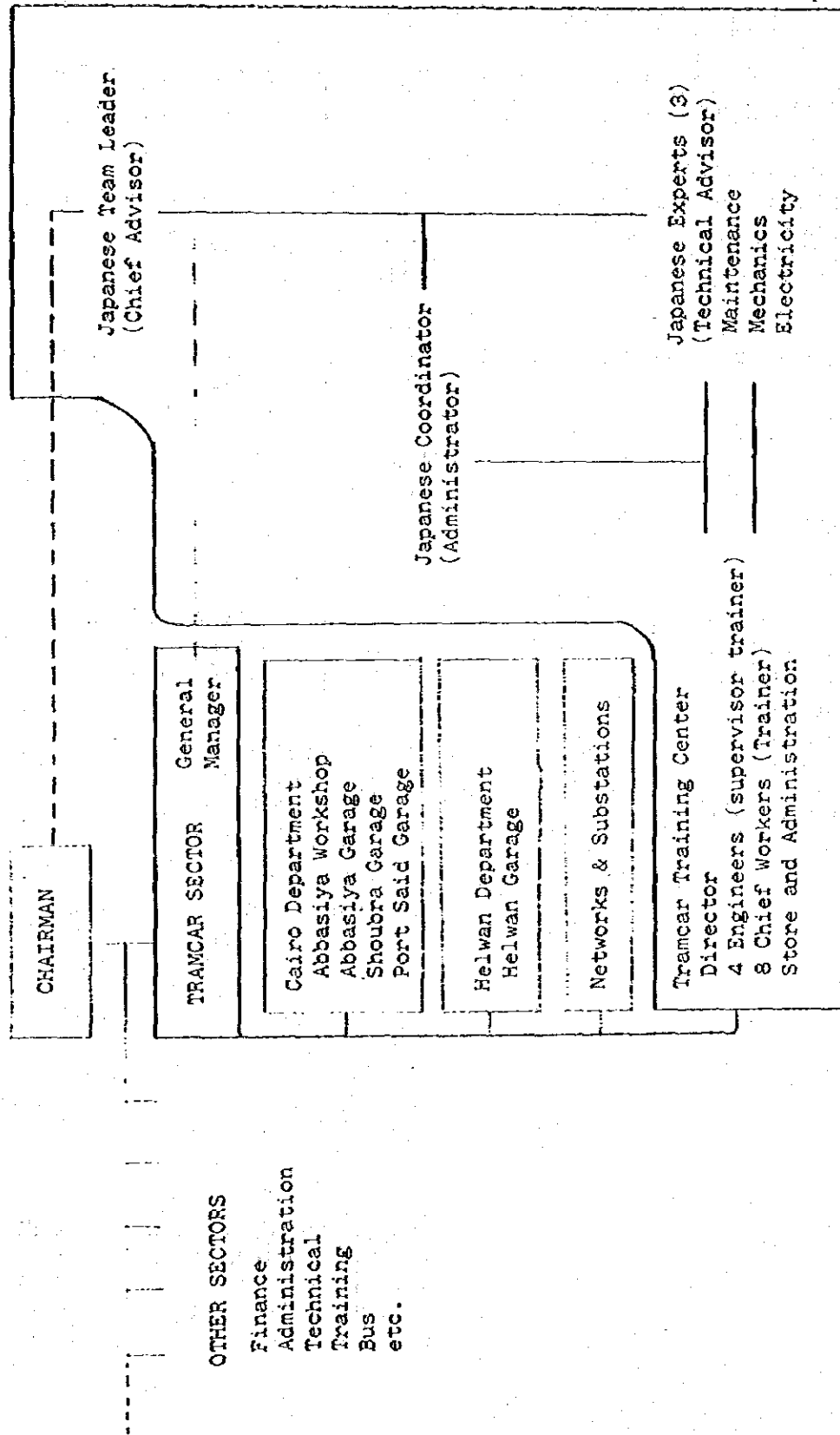
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Abbreviation

The Center	The CTA Tramcar Training Center
The Project	The CTA Tramcar Training Center Project
CTA	Cairo Transport Authority
JICA	Japan International Cooperation Agency
The Team	The Japanese Expert Team

1. ORGANIZATION

(1) Project Organization



(2) STAFF OF THE TRAMCAR TRAINING CENTER

OCTOBER 31, 1985

Japanese Expert Team

Norihiko Saeki
(Chief Advisor, Leader)

Kenji Yamazaki
(Coordinator)

Toshio Oinuma
(Expert on Tramear Maintenance)

Haruji Kumagai
(Expert on Tramcar Electricity)

Hisashi Inoue
(Expert on Tramcar Mechanics)

Takehide Sano
(Chief Advisor, Leader:
- Apr.30, 1985)

Hideo Sato
(Expert on Tramcar Maintenance:
- Feb.28, 1985)

CTA Staff

Ashour Samman Aly Hammad
(Director)

Engineers (4)

Ashour Samman Aly Hammad (Electricity)
Kamal Mohamed Hasanain El Khawaga (")

Mohamed Taha Madbouly Mohamed (Mechanics)
Awad Abdou Mohamed Abou Zead (")

Chief Workers (8)

Abd El Kader Aly Alian Sabra (Electricity)
Aly Abou El Ata Khatab (")
Hedar Badry Mohamed Hassan (")
Misbah Gorg Seliman Awad (")

Mohamed Abd El Meguid Bekhit (Mechanics)
Shawky Gorgy Saleb (")
Adel Sabry Mohamed Shalaby (")
Samir Mostafa Nosir (")

Secretaries (3)

Mohamedeen Ahmed
Zaynab Abd El Wahab
Magda Mohamed

Storemen (3)

Mohamed El Arabi
Ahmed Abd El Moati
Ahmad Omar

Fireman (1)

Behery Abd El Gany

Driver (1)

Abd El Rahman

Messengers (5)

Abd El Fattah Mohamed 1st Floor
Abd El Fattah Ramadan 1st Floor
Metwaly Hassan 2nd Floor
Fadl Alla Gaad Alla Simulator Hall
Hamdy El Saied Simulator Hall

(3) Japanese Expert Team

The task of the staying Japanese experts is to convey their practical and theoretical know-hows to four engineers who are now improving their careers as supervising instructors on tramcar maintenance in CTA. The Team has played an unsurpassable role in the training for counterpart engineers, chief workers and common workers as well as in arranging facilities of the Center. The Team is continuing its effort on technical advices at an extensive range to CTA in the Higher Course and training course for workers from the other authorities as well as in the planning of the Center's schedule.

(4) Instructors

The career and training history of the Center's instructors are as in the following page:

<u>Names of the Instructors</u>	<u>Former Post</u>	<u>Age</u> (year)	<u>Field</u>	<u>In-land Training</u>	<u>Training in Japan</u>
Ashour Samman Aly Hammad	36	9.5	Shoubra Electricity	Jun.12/Oct.19 '83	Aug.24/Nov.15 '83
Mohamed Taha Macbouly Mohamed	34	8.2	Port Said Mechanics	-do-	-do-
Kamal Mohamed Hasanain El Khawaga	40	6.4	Shoubra Electricity	-do-	May.13/Jul.24 '84
Awad Abdou Mohamed Abou Zead	34	6.4	Helwan Mechanics	-do-	-do-
Mahmoud Mohamed Dawoud	56		General		Oct.21/Nov.5 '84
Mohamed Abd El Meguid Bekhit	46	24.5	Port Said Mechanics	Oct.20'83/Feb.8'84	Jan.31/Mar.27'85
Hedar Badry Mohamed Hassan	33	14.5	Shoubra Electricity	-do-	-do-
Shawky Gorgy Saleb	49	26.0	Port Said Mechanics	-do-	Jun.9/Jul.31'85
Adel Sabry Mohamed Shalaby	29	6.0	Abbasiya Mechanics	-do-	-do-
Aly Abou El Ata Khatab	35	13.3	Port Said Electricity	-do-	-do-
Samir Mostafa Nosir	32	12.8	Shoubra Mechanics	-do-	-do-
Abd El Kader Aly Alian Sabra	41	19.7	Abbasiya Electricity	-do-	-do-
Misbah Gorg Seliman Awad	36	13.2	Abbasiya Electricity	-do-	-do-

Training in Japan at: Transportation Bureau of Tokyo Metropolitan Government

Toshiba Corporation
Kinki Sharyo Co., Ltd.
Japan National Railway
JICA

(5) Meeting

Meetings of four varieties have been held to exchange views and to communicate informations in order to promote quick activities of the Project and to solve technical and administrative problems.

- a. Japanese Expert Team's Meeting (every Wednesday)
- b. Meeting with CTA Staff

These meetings were held mostly at Japanese experts' office in the Center. CTA staff includes four counterpart engineers and Eng. Mr. M. Dawoud, General Manager of the Tramcar Sector and his staffs occasionally upon request.

- c. JICA Office Routine Meeting

Both Mr. N. Saeki and Mr. K. Yamazaki visit JICA Cairo Office every Tuesday to have a routine meeting with Messrs. A. Hashimoto and S. Matuura, Resident Representative and Deputy Representative of the Office in order to report progresses in the Project and to exchange communications between the project site and the Office and JICA Headquarters in Tokyo.

- d. Conference of Project Leaders in Tokyo

Leaders of the projects in the developing countries get together in Tokyo annually to take part in the Conference held by Overseas Center Division, Social Development Cooperation Department of the JICA Headquarters where current affairs of every project are reported and discussed by the participants and JICA officers in charge.

Mr. T. Sano, former leader of the Team, returned to Tokyo for the purpose of attending the said conference for a week in January 1984 and his successor, Mr. N. Saeki's participation in the Conference is expected in the same month next year.

2. TRAINING

GENERAL POLICY

The Japanese Expert Team in close collaboration with the Egyptian side has studied the results of the worker course first session and made modifications for improvement.

Because the simulator was not equipped at that time, the first session concentrated rather on theoretical training than on practical one. Equipped and full-scale practical training consequently became available, the Center is focusing on exercising practical trainings.

It is the duty of the Japanese experts to elevate the ability of the Center's engineers and chief workers in order to practice training not only for CTA workers but also for the workers of the other authorities who expect much from the Center. The Japanese Expert Team will do the best in amplifying the trainings of the Center in order to meet the requirement of these authorities.

(1) Training for Instructors

a. Engineer (Supervising Instructor)

In-land training for four counterpart engineers was done through June to October 1983 and their study and training in Japan, divided into two groups, was also completed until July 1984. Considerable amounts of these engineers' knowledge and technique in mechanical and electrical fields, attained through the above mentioned training, have been supplemented by a further practical training which was realized by the simulator system installed in April 1985. Advices on making plans and schedules are suggested to them, especially to the Director, when required, in consideration that the engineers are the supervisors of the whole training of the Center.

b. Chief Worker (Instructor)

Training for eight chief workers was done through October 1983 to February 1984, utilizing donation equipments such as over-head-projector, video recorder, etc.. Their theoretical training was implemented mostly through the arrangement of the textbooks (Arabic). Five among them were trained in Japan. The installation of the simulator in April 1985 enabled the chief workers to pack on more knowledge and skills.

PROBLEMS AND REMEDIES

PROBLEM

REMEDY

COURSE A
MECHANICS

1. Term

2.5 months (311 hours) was not long enough to perform practical training.

To be expanded more than 350 hours.

2. Contents of Training

(1) Assembling and disassembling of the main motor is described in the mechanical textbook.

Neither mechanical engineers

nor chief workers have experience on the above subject, which was thus not practiced.

Some in charge of electricity will teach the subject and increase the number of technicians for it.

(2) Assembling and disassembling of each compressor component was practiced but inspection test after re-assembling and troubleshooting could not be performed.

Utilizing the AB Test Rack, Door Closing Test Rack and Simulator, those test will be practiced.

	PROBLEM	REMEDY
COURSE A MECHANICS	(3) Discrepancy of titles of certain courses -- blanket title (like "Mechanics") vs. specific title (like "Blacksmith, Steel Metal Work")	Courses will be integrated. Course A will be "Mechanics (1)" and Courses D, E and F will be "Mechanics (2)".
	<u>3. Grade of Trainers</u>	
	Some of the chief workers do not have passable experiences.	Four chief workers are divided into principal and vice. From August three who will have finished training in Japan will teach the other in rotation.
COURSE B POWER ELECTRICITY	<u>1. Term</u> 1.5 months (189 hours) was too long in respect to the contents of the training.	To be shortened to not less than one month (120 hours).

PROBLEM

REMEDY

COURSE B

2. Contents of Training

POWER ELECTRICITY (1) A few subjects (Rotator, Control Equipment) are overlapped with the contents of Course C. Discrepancy of the title of the course and its contents

Subjects in connection with Rotator only will be dealt in this course being titled as "Car Electricity (1)" and will again be renamed as "Car Electricity (2)" in the 3rd session.

(2) Some of the chief worker-trainers do not have passable experiences.

Stress on the chief worker by individual/group guidance.

COURSE C

1. Term

CAR ELECTRICITY

2.5 months (311 hours) was not long enough to perform practical training.

To be expanded more than 350 hours.

2. Contents of Training

(1) A few subjects are overlapped with the contents of Course B.

All subjects will be included in this course except for Rotator, which shall be dealt in B.

(2) Description of the contents was not appropriate.

To be changed with suitable expressions.

(3) Same as in Course B, Power Electricity, 2.Contents of Training (2).

PROBLEM	REMEDY
<p>COURSE D ACCOMMODATION HANDICRAFT WORK</p>	<p>1. Term 0.5 month (60-65 hours) was not long enough due to the Bonus day, Salary day, Holiday. To be expanded more than one month (120 hours).</p>
<p>COURSE E BLACKSMITH STEEL METAL WORK</p>	<p>2. Contents of Training (1) - (4)</p>
<p>COURSE F LUBRICATING MEASURING PAINTING</p>	<p>(1) Some of the trainees had more ample knowledge than the trainer had in a respective special field. (2) Subjects like engineering mechanics or matters on steel materials, casting, forging and processing machine are included in the courses E and F. They are not in strong connection with car maintenance and are not useful for workers of CTA where job-description is well separated. Courses D, E and F will be integrated as Course D and retitled as "Mechanics (2)", giving up unnecessary subjects. Mechanical chief workers will be trained on welding in their spare time. Implementation of one course (one month, 10 workers) after the integration of 3 courses (0.5 month, 10 workers X 3) will make nomination easier.</p>

PROBLEM

COURSE D (3) Mechanical chief workers did not
ACCOMMODATION have experience on welding in
HANDICRAFT WORK Course E. A chief worker from
electricity department extended
a help.

COURSE E
BLACKSMITH
STEEL METAL WORK

(4) It should not be overlooked that
even a loss of chief worker or two
would cause unfavorable situation
at their posts. Also the shortness
of the course (0.5 month) was
considered to be belittled. Thus
some courses did not reach the full
quota.

COURSE F
LUBRICATING
MEASURING
PAINTING

3. Grade of the Trainers
Same as in Course A.

PROBLEM

REMEDY

1. Term of the Courses

Mechanical

A + D, E, F = 4 months
2.5 0.5 x 3

A(M1) + D(M2) = 4 months & more
>3 months >1 month

Electrical

B + C = 4 months
1.5 2.5

B(E2) + C(E1) = 4 months & more
>1 month >3 months

IN GENERAL

2. Illiteracy

Trainee nomination included illiterates.

Egyptian (male) illiteracy was 46.4 per cent* to the total population in 1976. The figure implies that the Center will have to welcome quite a few number of illiterate nominees. Oral examination is indispensable for them with an aid of an assistant.

Course	Nominee	Illiterate
A	10	3
B	10	1
C	10	2
D	10	1
E	7	2
F	6	3
	53	12

Illiteracy: 22.6 per cent

*a figure quoted from "Egypt" by Jitsugyo-no-Nipponsha.

30th May 1965

THE CONTRASTIVE CHART OF THE TRAINING COURSES (FORMER & NEW)

(FORMER)

COURSE	DESCRIPTION	TERM Month/Year	NUMBER OF TRAINEE
A Mechanics	Dodge-truck, Brake Equipment, Maintenance	2.5/311	10
B Power Electricity	Pantograph, Main Resistor, Traction Motor, Motor-Generator, Compressor Motor, Maintenance	1.5/109	10
C Car Electricity	Main and Control Circuit, Control Equipment, Measuring Instrument, Other Equipment, Maintenance	2.5/311	10
D Accommodation Handicraft Work	Car Body, Seat, Door, Flooring, Materials of Repair, Other Equipment, Maintenance	0.5/05	10
E Blacksmith Steel Metal Work	Steel metal, Casting, Blacksmith, Machining Work, Dynamics of Machining, Theory of Welding and Welding Work	0.5/00	10
F Lubricating, Measuring Painting	Lubricating, Measuring Instrument, Use of Tools, Paint and Painting	0.5/04	10

(New)

COURSE	DESCRIPTION	TERM Month/Year (More than)	NUMBER OF TRAINEE
A (M1)* Mechanics (1)	Dodge-truck, Brake Equipment, Measuring Instrument, Lubrication, Maintenance	3.0/350	10
B (E2) Car Electricity(1)	Rotating Machine, Measuring Instrument, Lubrication, Maintenance	1.0/120	10
C (E1) Car Electricity(2)	Operation and Control system, Main, Control and Auxiliary Circuit, Electrical Equipment and Parts (without R. Machine), Measuring Instrument, Lubrication, Maintenance	3.0/350	10
D (M2) Mechanics(2)	Car Body, Other Equipments, Blacksmith, Machining, Welding, Painting, Tools, Measuring Instrument, Lubrication, Maintenance	1.0/120	10

Note: 1. The new courses will be put in force from the 2nd session.
2. This adjustment on course names will take place from the 3rd session.

MECHANICS		Eg: AWARD ABOUT ZED
	Problems after 1st Session	Method for solving them
(A) MECHANICS	The time is short	Need some long time
(B) POWER ELECTRICITY		
(C) CAR ELECTRICITY		
(D) ACCOMMODATION HANDICRAFT- WORK	No Problems	
(E) BLACK-SMITH STEEL METAL- WORK	The time is long some subject not important	The time must be short some subject must cancel and some must reduced
(F) LUBRICATING MEASURING PAINTING	The time is long some subject not important	The time must be short some subject must cancel and some must reduced

Electricity		Eng. Kamal Mohamed El Khawaga	
	Problems after 1st Session	Method for Solving them	
(A) MECHANICS		1) Practical training not enough ↓ simulator and electric test room shall be solve this problem 2) Some of student can not read and write 3) Selection	
(B) POWER ELECTRICITY			
(C) CAR ELECTRICITY	Jillo	Jillo	
(D) ACCOMMODATION HANDICRAFT- WORK		(E) BLACK-SMITH STEEL METAL- WORK (F) LUBRICATING MEASURING PAINTING	
(E) BLACK-SMITH STEEL METAL- WORK			
(F) LUBRICATING MEASURING PAINTING			

Eng. Mohamed Taha (Mechanics)

	Problems after 1st Session:	Method for Solving them
(A) MECHANICS	Some of Subjects need more time for practical training for workers	Simulation Equipments Solve this problem with increasing the time of Course (A) from 2.5 month to 3 monthes
(B) POWER ELECTRICITY		
(C) CAR ELECTRICITY		
(D) ACCOMMODATION HANDICRAFT-WORK	Some of Subjects did not explained practically.	We recorded Vedo tap in port sayind garage for that subjects and used for training
(E) BLACK-SMITH STEEL METAL-WORK	Some of Subjects were not important to study	It took short time to study it.
(F) LUBRICATING MEASURING PAINTING	Some of Workers cannot write and read. This problem exists in all Courses.	We put the questions of the examination without writing for example put sign correct and wrong, etc

c. Training for Workers from Other Authorities

Training workers from other authorities is a second target of the Center. It was July 1985 that Eng. Mr. Wagdy Habib, Chief of Transporting Sector, Heliopolis Company for Housing and Development, sent a letter to Eng. Mr. Dawoud, General Manager of the Tramcar Sector inquiring if the Center was ready to accept trainees of another authority. The Center studied the possibility, having discussions with the Japanese side, which expressed its readiness to cooperate on the matter intensively.

As a result of the discussions the Center immediately began to prepare the Heliopolis Course by training instructors (counterpart engineers and nominated chief workers) on Heliopolis tramcars through arranging textbook for the course. Heliopolis Course is scheduled to begin from December 1985 accepting twelve trainees.

The Center expects the participation of Alexandria Passenger and Transportation Authority, an another authority which runs tramcars in Alexandria, in the worker training by the Center in the near future and is going to make textbook for this purpose.

(3) Case Study -- Pinion Trouble

In the middle of May 1985, Eng. Mr. Mahmoud Dawoud, General Manager of the Tramcar Sector, sent an urgent request to the Team through the director of the Center for a cooperation to solve a major crisis at their garages. The crisis was a breakdown of almost all the CTA tramcars in its principal garages. Originated from the pinion of the main motor, a number of the tramcars in service was running out and the situation was very serious.

Examined the request and the situation at once, the Team had a series of talks with the director and three engineers of the Center to cope with the matter and made up a plan as shown in MEMORANDUM JC-0012-85 and JC-0013-85.

One of the major difficulties for the Japanese side to take part in solving the trouble was that the trouble-shooting was whether or not in the framework of the Record of Discussions of the Project. In a plain word, the Japanese expert team is here for the training of instructors at the Center and not for a trouble-shooting of CTA tramcar service. The Team overcame the question by obtaining an agreement of the Center's administration to change the Center's schedule and handling the trouble-shooting as a part of the Course B training.

A result of the trouble survey by the Team is as in SURVEY REPORT JC-0014-85. The trouble was attributed to (1) the quality of the pinion, (2) the quality of maintenance work and its standardization.

Nominated counterpart engineers and chief-workers performed a training for 15 workers from four garages and one workshop at Shoubra Garage on May 22, 23 and 25.

CTA side continued the training and by the supervision of the Center's staff on the training for following weeks the Tramcar Sector got out of the critical situation.

Reference: MEMORANDOM	JC-0012-85	May 16, 1985
-do-	JC-0013-85	May 21, 1985
SURVEY REPORT	JC-0014-85	May 27, 1985

JAPAN INTERNATIONAL COOPERATION AGENCY
CAIRO TRANSPORT AUTHORITY

JICA - CTA TRAMCAR TRAINING CENTER PROJECT

Project Office :
CIA Port - Soid Garage
8, Sherikoot St. Cairo - Tel. 940053

JICA Cairo Office :
26, El-Quds El-Shareef St., Muhondeseen - Cairo
Tel. 811502 - P. O. Box 2667 Cairo



هيئة التعاون الدولي باليابان
هيئة النقل العام بالقاهرة
مشروع مركز تدريب الترام

مكتب مشروع
جراج بود سعيد
٨ شارع الشركات القاهرة ت ٩٤٠٠٥٣
مكتب القاهرة ٢٦ شارع القدس الشريف
مهندسين القاهرة - ت ٨١١٥٠٢
ص.ب ٢٦٦٧ - القاهرة

JC-0012-85

May 16, 1985

INTER OFFICE MEMORANDUM

CTA side has requested the Japanese Expert Team a help in connection with shooting troubles of pinion-gear breakdown.

The request was proceeded to the Training Center while it was preparing the new training session for the workers.

Having had the situation in mind, Eng. A. S. Aly, Director of the Training Center had a discussion with Eng. M. Dawoud, General Manager of the Tramcar Sector.

On April 15 the Training Center saw a discussion in the Japanese Expert Room. The member as follows:

Eng. A.S.Aly
Director

Eng. A.A.Abou-Zead
Mechanical Engineer

Mr. Saeki
Leader of the Japanese Team

Mr. Yamazaki
Coordination Manager

Mr. Oiruma
Maintenance Expert

Mr. Kusagai
Electric Expert

JAPAN INTERNATIONAL COOPERATION AGENCY
CAIRO TRANSPORT AUTHORITY
JICA - CTA TRAMCAR TRAINING CENTER PROJECT

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هيئة التعاون الدولي باليابان
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مكتب مشروع
جراج بورسعيد
٨ شارع الشركات القاهرة ت ٩٤٠٠٥٣
مكتب القاهرة ٢٦ شارع القمصين الشريف
مهندسين القاهرة - ت ٨١١٥٠٢
ص.ب ٢٦٦٧ - القاهرة

Both sides confirmed that the request of shooting the trouble related to the pinion-gear was an urgent one and the said request was made by General Manager of the tramcar sector. It was also confirmed that present trouble threatens normal operation of CTA lines.

Through the discussion the Japanese side stated that it was pleased to accept the request by fulfilling the followings.

The Japanese side makes an inspection survey at CTA Shobra and Port Said garages in order to study and seek for a most appropriate method of practical training on engineers of the Training Center.

The Training is made as a part of the Course B together with inspection and survey.

The training includes the practical method of assembling and disassembling of the pinion-gear only.

The Japanese side can make a general advice to the Egyptian side on the present trouble and the former side is not responsible for any measures which CTA would take in order to shoot the trouble.

JAPAN INTERNATIONAL COOPERATION AGENCY
CAIRO TRANSPORT AUTHORITY
JICA - CTA TRAMCAR TRAINING CENTER PROJECT

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هيئة التعاون الدولي باليابان
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جراج بورسعيد
٨٠ شارع الشركات القاهرة ت ٩٤٠٠٥٣
مكتب القاهرة ٢٦ شارع القدس الشريف
مهندسين القاهرة - ت ٨١١٥٠٢
ص ب ٢٦٦٧ - القاهرة

The Egyptian side has understood the above and is pleased to offer all the preparation and necessities which the Japanese side requires for the training.

JAPAN INTERNATIONAL COOPERATION AGENCY
CAIRO TRANSPORT AUTHORITY
JICA - CTA TRAMCAR TRAINING CENTER PROJECT

Project Office :
CTA Port - Soid Garage
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هيئة التعاون الدولي باليابان
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مكتب القاهرة ٢٦ شارع القدس الشريف -
مهندسين القاهرة - ت ٨١١٥٠٢
ص.ب ٢٦٦٧ - القاهرة

JC-0013-85

May 21, 1985

INTER OFFICE MEMORANDUM

Re: CTA's Request for trouble-shooting on Pinion

Ref: Memorandum No. JC-0012-85

The Japanese Expert Team made an inspection survey on 18, 19 of May concerning the pinion of the main-motor and some related matters upon request by CTA Tramcar Sector.

The Team and the Egyptian side had a talk after the survey and both have agreed the following items:

1. A survey report shall be compiled in English translation and proceeded to the Egyptian side shortly.

2. The Japanese Experts will perform a training for their three counterpart engineer and chief workers on correct assembling of main motor pinion and a few related matters at Port Said garage on May 20 and 21 within the frame of the conditions mentioned in the "Memorandum" JC-0012-85.
3. Counterpart engineer and chief workers will do a training for 15 workers recruited from four garages and one workshop at Shoubra garage on May 22, 23 and 25.
4. Ramadan hours notwithstanding, time should be kept not to waste limited hours:

from 9:30 to 13:30

5. 15 workers must be distributed into three days training. Thus five a day to achieve maximum result under the instruction of three engineers.
6. In regard to the worker training, the Japanese Experts were asked to attend to the training on May 22 and this request was agreed by the Team.
7. Training place should have an ample and independent room. The oil pan should be heated enough in advance.
8. The following items are necessary for the training and must be procured in time:

one new pinion for measuring

three pinions for motor assembly.

key (3) and nut (3) and washer (3)

oil tank heater

hammer and spanner together with necessary tools

used cloths

chalk

scale

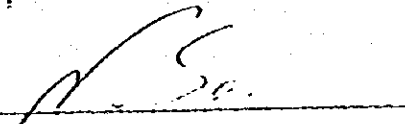
kelosmo

send paper

9. The training schedule should be observed and the new training session will not be jeopardized by this training.



Yours faithfully,


Norihiko Saeki
Leader Japanese Expert Team

Copy: Director of the Training Center
Engineers of the Said Center.
Eng. M. Dawoud, General Manager of the Tramcar Sector.

JAPAN INTERNATIONAL COOPERATION AGENCY
CAIRO TRANSPORT AUTHORITY

JICA - CTA TRAMCAR TRAINING CENTER PROJECT

Project Office :
CTA Port-Said Garage
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JICA Cairo Office :
25, El-Ouds El-Shoreef St., Muhondeseen - Cairo
Tel. 811502 - P.O.Box 2667 Cairo



هيئة التعاون الدولي باليابان
هيئة النقل العام بالقاهرة
مشروع مركز تدريب الترام

مكتب مشروع
جراج بورسعيد
٨ شارع الشركات القاهرة ت ٩٤٠٠٥٣
مكتب القاهرة ٢٦ شارع القدس الشريف
مهندسين القاهرة - ت ٨١١٥٠٢
م.ب ٢٦٦٧ - القاهرة

JC-0014-85

May 27, 1985

SURVEY REPORT

Subject: CTA Accidents and Troubles Caused by The Main Motor
Pinion

Place and Date of the Survey: At Shoubra CTA Garage and Port Said
CTA Garage on May 18, 1985

1. Split Pinion

A. Inspection

It was found that Egyptian imitation pinions split and no split with Japanese pinion. Egyptian pinions either crack or split into more than two pieces and got out of the armature shafts where it should be set tightly.

Although this matter requires a detailed laboratory research but, at a glance, the origin on the trouble is from the quality of the pinion.

B. Suggestive Countermeasure

The trouble originates from the quality of the Egyptian imitation pinion (e.g. material, heating treatment, etc.). No countermeasure if the imitation pinion with the present quality is used. Although a careful eye-inspection at the assembly to find a fine crack of the pinion and early change of pinion within the limit of abrasion (not less than 3 mm at the tip of the cog) may improve the situation, it is indispensable to use a pinion of improved quality.

2. Abrasion of the Pinion Cog

A. Inspection

Limit of Abrasion (CTA Standard): Not less than 3 mm at the tip of the pinion cog.

Japanese pinions endure more than two year, while Egyptian pinions do less.

Pinions are used until its cogs become like lazor blades.

With worn axle-metal, the engagement gap between the pinion and the gear become wide. Engagement malfunction may occur in a severe case.

B. Suggestive Countermeasure

Although it is unavoidable in Egypt that fine sand and dust comes into the gear-box, a sure maintenance work for the gear-box must be made together with change of the gear compound grease at a fixed interval.

A careful attention should be made to the abrasion of the axle metal: Fixing a standard for the limit of the metal abrasion. 6 mm is a recommendation.

3. Gap Slip between the center of the main-motor and the center of the axle-shaft caused by the ioose bolts of the axle-box-cover

A. Inspection

At replacing in the garages, no measuring on the diameter of the axle-shaft and the inside diameter of the axle-metal is made.

Bolts of the axle-box-cover, especially lower-pinion side one, tend to slacken.

This slackening causes an unnecessary opening between the axle-shaft and the axle-metal and, when rotating, the main-motor moves apart to the bogie side. Thus the pinion-gear engagement gets out of order.

The wrong engagement causes either an abrasion of the tip of the pinion-cog or an actual loss of the cogs.

New or tightly locked bolts usually do not slacken but Egyptian bolts tend to do so, though tightened at the weekly inspection.

B. Suggestive Countermeasure

Inside diameter of the axle-metal should be wider by 1.0 - 2.0 mm only than the axle-shaft.

It is necessary to lathe the axle-metal to the axle-shaft (its diameter also should be exactly measured in advance) for correct adjustment.

It is strange that the bolts slacken since they are tightened with spring washers but if the slackening is not a strange case they had better be tightened with steel wire to ensure that they do not rotate.

4. Slackened Pinion

A. Inspection

For some reason pinion slackens and the pinion washer is broken and the stopper-nut also slackens.

It was confirmed that there was a view that the end of the armature shaft and the outer end of the pinion stopper-nut should be on the same line. This view may lead to an uncomplete assembly.

B. Suggestive Countermeasure

At pinion fixing, the tapered end of the armature shaft and its dent should be examined. The stopper-nut must be completely tightened.

5. Disabled Engagement

A. Inspection

By any of the reasons 1 to 5, the pinions and the gear bite each other and their rotation stops. This causes flat tyres consequently.

B. Suggestive Countermeasure

A correct assembly of the pinion and the observance of the abrasion limit are indispensable. Excessive acceleration should be avoided.

6. Others

- a. Gear abrasion
- b. Rectifier ball-bearing abrasion
- c. Disabled insulation caused by the coil and the core not in order
*Tighten up every four (or eight) years.
- d. Loose bolt of the brush-holder
- e. Damage on the gear-box
*Good track maintenance solves this problem.

This survey was made and typed by the Japanese Expert Team based on the foregoing "Memorandum" JC-0012-85 and JC-0013-85.

3. EQUIPMENTS

(1) Donation Machinery and Equipments

Donation of machineries and equipments is one of the major undertakings of JICA's overseas technical cooperation. Various machineries and equipments including a motor vehicle have been donated to Egypt to be utilized exclusively for the implementation of the present Project. The followings are the arrival date of donation equipments and machineries from the beginning of the Project.

Donation Equipments (Sea)

<u>Date of Arrival</u> <u>Alexandria Port (the Center)</u>	<u>Equipments</u>
1. May 20, '83 (Aug. 7, '83)	Copymachine, Video
2. Jul. 26, '83 (Sep. 5, '83)	Alkaline Battery, Measuring Equipments
3. Oct. 1, '83 (Nov. 13, '83)	AB Test Rack, Compressor
4. Oct. 5, '83 (Jan. 16, '84)	Main Motor, Motor Generator
5. Jun. 13, '84 (Aug. 20, '84)	Bogie, Pantograph
6. Nov. 26, '84 (Dec. 29, '84)	Simulator
7. Sep. 15, '85 (Oct. 1, '85)	Test Unit for Air Compressor
8. Local Purchase (Aug. 5, '84)	Motor Vehicle (Wagon)

Supplementary Equipments (Air)

<u>Date of Arrival</u> <u>Cairo Airport (the Center)</u>	<u>Equipments</u>
1. Jul. 10, '83 (Oct. 27, '83)	Camera, Stationeries
2. Aug. 22, '83 (Oct. 19, '83)	Books
3. Mar. 5, '84 (Jun. 12, '84)	Typewriter, Over Head Projector
4. Mar. 5, '84 (Sep. 9, '84)	Calculator, Typewriter

TOTAL AMOUNT: Y308,553,128.-
=US\$1,341,535.34 (@230.-)

(2) Unpacking, Checking, Storing and Registration

The Team has dispatched its member to Alexandria Port for doing inspections of the donated machineries and equipments on each arrival (except for the 3rd vessel). Members checked the condition of the packing and its damage at the Port warehouse or at the related store yard in consultation with CTA Alexandria office.

Machineries and equipments, delivered to Cairo by CTA, were stored in the North Cairo Tramcar Workshop area or Port Said Garage and moved to the Center, where further inspections were carried out.

Since this is the first technical cooperation project between Japan and Egypt on CTA, there had been a confusion about the administration and the control of the donated machineries and equipments. To solve this, the Team worked out to get understanding of CTA side on donation procedure of JICA equipments and prepared a "Equipments Ledger for C.T.A. Tramcar Training Center". As a result of discussions over the matter the Team and CTA Tramcar Sector Procurement Section agreed to adopt the same ledger as a master reference for JICA donation machineries and equipments.

Those equipments have been in the control of the Japanese Expert Team so that they should not be lost and could be at easy access, while the system of the Center store in those days was very awkward. The Team overcame the unfavorable situation by making the above-mentioned "Equipments Ledger". The ledger has been being supplemented every time a new vessel arrived. Some equipments were already transferred to the control of CTA side (the Center store) and it is expected that all the equipments will be transferred to the Egyptian side by early next year.

(3) Equipments by CTA

Certain equipments (not by JICA) Became necessary for trainings at the Center (e.g. Chain Block Frames). The Center has asked CTA Abbasiya workshop to manufacture those necessities but it took much time (usually more than several months) and only a few equipments were obtained. Actually this delay made serious inconveniences on the Center's training schedule.

4. TEXTBOOK

Following is a list of textbooks already compiled in the Project.

ENGLISH

TRAMCAR MAINTENANCE
" ELECTRICITY
" MECHANICS

Total: 3 Volumes

ARABIC

TRAMCAR MAINTENANCE
" ELECTRICITY
" MECHANICS
" MECHANICS (II)

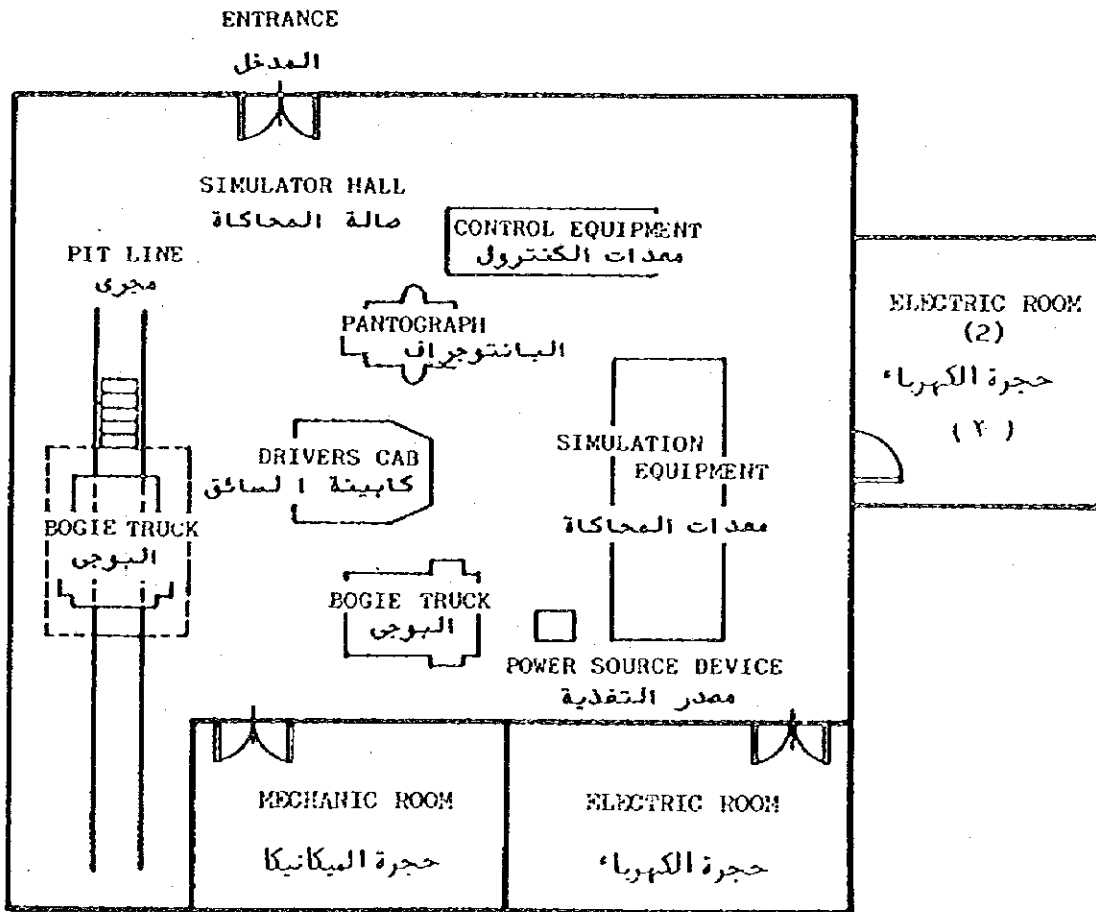
Total: 4 Volumes

English textbooks are used as guide-book or manual for the instructors and Arabic textbooks are for the trainees at the Center.

5. FACILITIES

(1) Simulator Hall

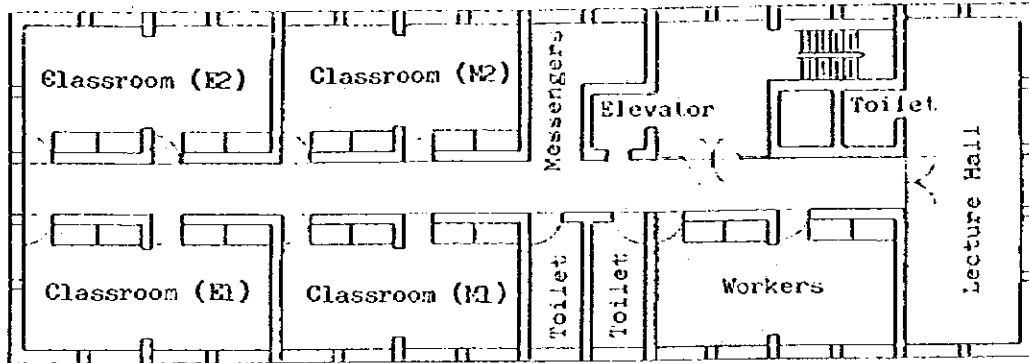
Tramcar simulation system equipments were installed in the simulator hall, once called as the conductor's hall, by April 1985 with the aid of three short-term Japanese experts who JICA dispatched for the particular purpose from February 3 to May 2, 1985. The Hall and the equipments are in use since then for the practical training at the Center.



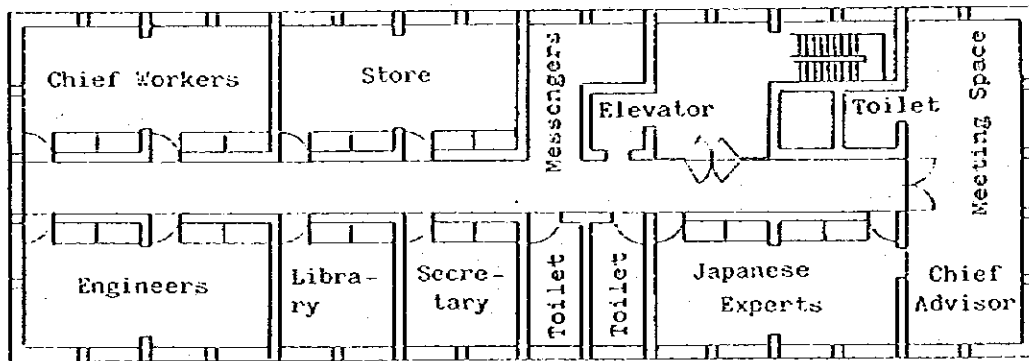
ARRANGEMENT OF SIMULATOR HALL ترتيب صالة المحاكاة

(2) Arrangement of Offices & Classrooms in the Center

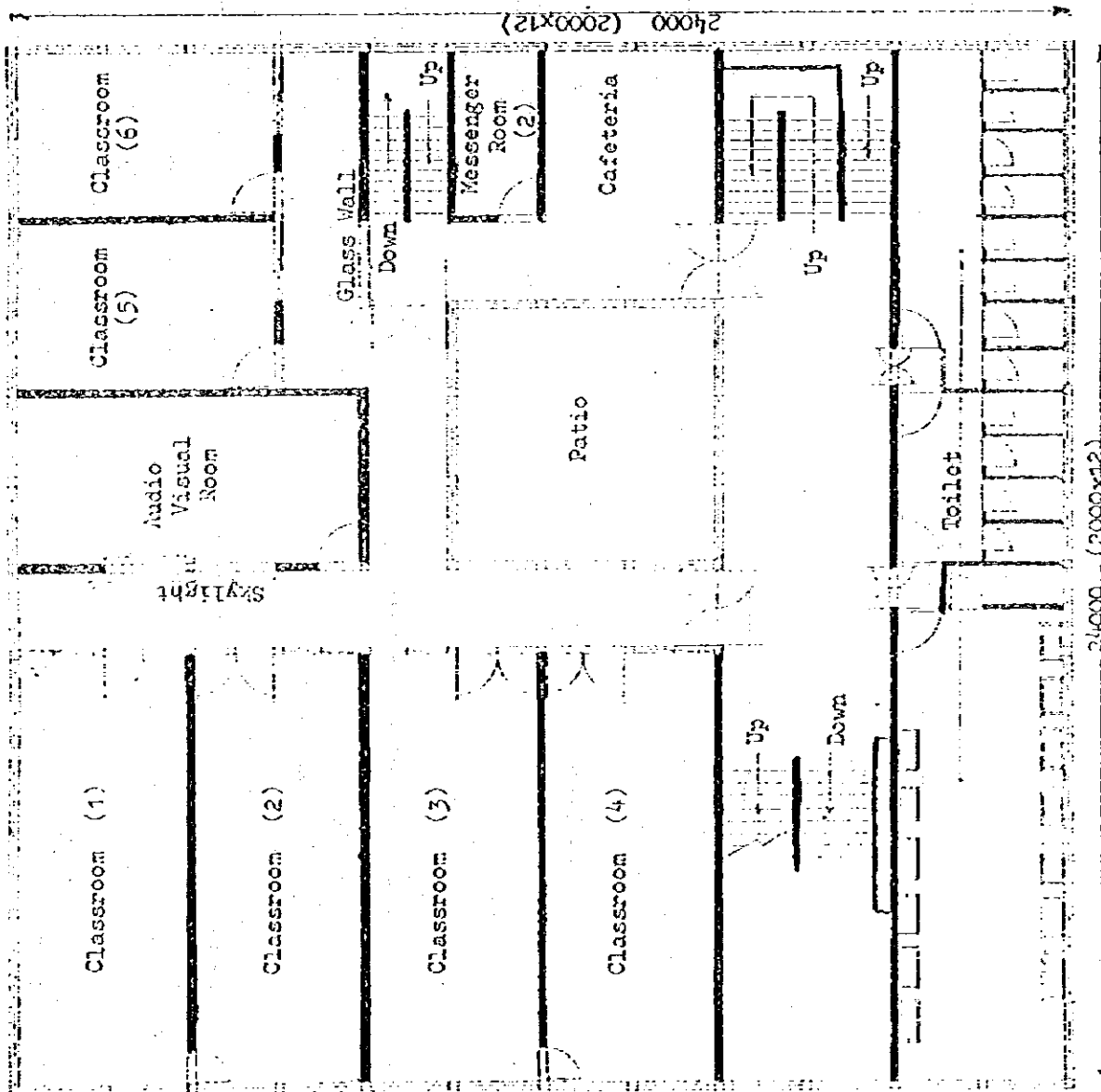
2ND FLOOR



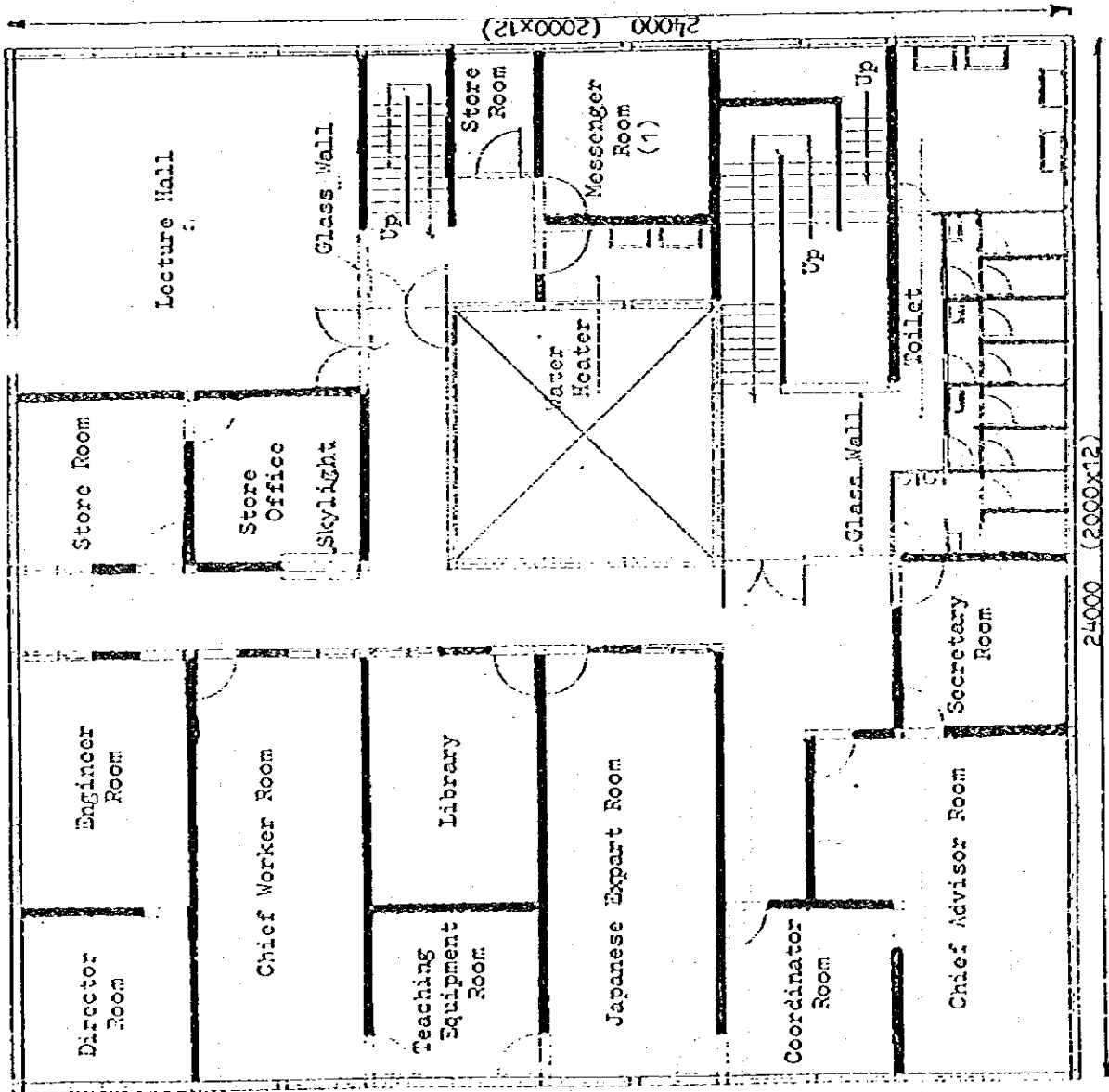
1ST FLOOR



(3) The Center -- New Building



GROUND FLOOR
(NEW Training Center)



1 ST FLOOR
(NEW Training Center)

(4) Area Measurement of the Center Facilities

		Training Center	New Training Center	Simulator Hall
2 ND FLOOR and 1 ST FLOOR	Chief Advisor Room	m ²	40 m ²	m ²
	Coordinator Room		16	
	Japanese Expert Room		40	
	Teaching Equipment Room		16	
	Library		24	
	Director Room		16	
	Engineer Room		24	
	Chief Worker Room		40	
	Secretary Room		16	
	Store Office		16	
	Store Room		16	
	Lecture Hall	44	64	
	Store Room		6	
	Water Heater		8	
	Messenger Room(1)	13.5	16	
	Classroom (E1)	36		
	Classroom (E2)	36		
	Classroom (N1)	36		
	Classroom (N2)	36		
	Worker Room	36		
	Elevator	4.5		
Toilet	22.5	48		
Open Space	87.5	120		
Subtotal	352 m ²	576 m ²		
1 ST FLOOR and GROUND FLOOR	Classroom (1)		40	
	Classroom (2)		40	
	Classroom (3)		40	
	Classroom (4)		40	
	Classroom (5)		24	
	Classroom (6)		24	
	Audio Visual Room		22	
	Messenger Room (2)	13.5	8	
	Cafeteria		16	
	Patio		36	
	Chief Advisor Room	44		
	Japanese Expert Room	36		
	Engineer Room	36		
	Chief Worker Room	36		
	Library	13		
	Secretary Room	13		
	Store Office	36		
Toilet	22.5	96		
Elevator	4.5			
Open Space	87.5	150		
Subtotal	352 m ²	576 m ²		
BASEMENT	Basement	(285.5)	(216)	
	Toilet	(18)		
	Open Space	(48.5)	(24)	
Subtotal	(352.00 m ²)	(240.00 m ²)		
SIMULATOR HALL	Simulator Hall			145.25
	Simulator Mechanic Room			30
	Simulator Electric Room (1)			30
	Simulator Electric Room (2)			29
Subtotal			234.25 m ²	
SUBTOTAL (Classroom)	138	240	0	
SUBTOTAL (Open Space)	223.5 (48.5)	204 (24)	0	
SUBTOTAL (Others)	644.5 (303.5)	972 (216)	234.25	
TOTAL	1006 m ² (556)	1399 m ² (210)	234.25 m ²	

6. PROBLEMS TO BE SOLVED

(1) Security for the Number of the Trainee

Fixed number of the trainees in the courses has not been satisfactory. 53 entries against fixed 60 in the first session. 15 against 20 20 in the courses A & C of the 2nd session. The Team considers it is important to secure the fixed number of nominees in order to train as much trainees, as possible in a shorter period and has strongly advised Egyptian side to improve the unfavorable situation.

CTA should correctly understand the very awkward situation of its tramcars demands an urgent and good maintenance job exercised by skilled workers from the Center. CTA must secure a satisfying number of nominee-trainees for the training in the Center.

(2) Benefit for the Trainee

In-training bonus is paid every month according to the average of each trainee's bonus which he received for three months before the entry. This average-3 month bonus system is applicable to all the courses. The system was said to have been introduced in the middle of 1985.

As for the benefit to the after-training trainee, the Center is requested to take a certain strong measure in order to follow up how a trained worker reassume his job at his work place.

A further study on a unsuccessful worker who failed in his examination should be necessary.

(3) Manufacture and Delivery of the Center's Requirement

With respect to requirements (equipments, tools, etc. not included in the equipments donated by the Japanese Government and necessary for the practical training in the Center), the Team has been advising in writing CTA to allocate or manufacture them. CTA side however did not effect their delivery almost always in time. Many manufactures have not been produced, although several months have passes since the Center requested their allocation.

The Team advises CTA to do its best to allocate the Center's requirement satisfactorily in time so that practical training schedule can be carried out without undue halt.

(4) The Staff of the Center

Established two years and seven months ago, the Tramcar Training Center is now operated in good shape with respect to its administration and training implementation. However it is considered to be necessary to increase the number of the chief worker trainer for the purpose of expanding and improving the performance of the Center, consequently in order to receive more trainees at the Center's training.

(5) Removal of the Center to the New Building

In reference to the subject mentioned in article No.6 of the Minutes of Meeting Between The Japanese Advisory Team and The Authority Concerned of the Cairo Transport Authority On The Technical Cooperation For The Cairo Transport Authority Tramcar Training Centre Project, Nov., 1984, the Team advises CTA to give a consideration to it so that the adjacent building shall be completed and all the function of the Center should move to it for the sake of obtaining more effective training in the future.

(6) Internal telephone

Although requested more than twenty times orally and several times in our letters No. JC-0027-84, JC-0011-85, JC-0017-85, JC-0023-85, an internal telephone between the administration and the simulator hall has not not yet been installed. CTA should install it without further undue delay to attain a better communication system which enables the Center's training smoother.

A P P E N D I X

- (1) Record of Worker Training
in the Center
- (2) Project History 1983 - 1985
- (3) Tentative Training Schedule
of the Center (June 1985 - 1987)
- (4) In-service Tramcars in Egypt
(Japanese Connection)
- (5) CTA Tramcar Service Line

(1) Record of Worker Training in the Center

Authority: CTA

Course: 1st Session C. (Cap. Electricity) Course

Period: 29 / Sep / 1984 - 15 / Dec / 1984 65 Days

Number	Name	Age	Post	Job	Attendance (%)	Examination												Passable (%)
						Theory						Practice						
						Passable 30			Passable 40			Passable 30			Passable 40			
						1st	2nd	3rd	Sub-total	1st	2nd	3rd	Sub-total	1st	2nd	3rd	Sub-total	
66053	Samer Libi Haron	32	A	Electricity	94	8	38	-	-	-	46	8	35	-	-	-	43	89
66657	Hamed Abdoh	28	W	"	95	9	37	-	-	-	46	8	34	-	-	-	42	88
65141	Mohamady Abdoh Badawy	34	A	"	91	7	34	-	-	-	41	8	39	-	-	-	47	88
65981	Abd El Khalifeh Mahrmond	37	W	"	95	8	34	-	-	-	42	9	37	-	-	-	46	88
66203	Mohamad Abdo El Hameed	29	P	"	97	9	37	-	-	-	46	9	32	-	-	-	41	87
66915	Armad Abdel El Azeez	29	H	"	94	8	38	-	-	-	46	8	33	-	-	-	41	87
65142	Sadat Mohamad Abdo	35	P	"	91	9	32	-	-	-	41	9	32	-	-	-	41	82
66163	Nasrat Galid	32	S	"	97	8	34	-	-	-	42	8	31	-	-	-	39	81
65880	Hany Saad	30	S	"	95	7	26	-	-	-	33	7	28	-	-	-	35	68
65189	Samy Ibraheem	38	S	"	91	6	27	-	-	-	33	6	25	-	-	-	31	64

Authority: CITA

Course: 1st session B (Power Electricity) Course

Period: 1 Jan. 1985 - 14 Feb. 1985 39 days

Number	Name	Age	Post	Job	Attendance (%)	Examination												Total	Remarks
						Theory			Passable 30			Practice			Passable 30				
						10		40		10		40		10		40			
						Particip-	Partion	1st	2nd	3rd	Sub-total	Particip-	Partion	1st	2nd	3rd	Sub-total		
66058	Heseen Yoseff	32	S	Electricity	95	9	37	-	-	-	46	9	37	-	-	-	46	92	
66020	Nabeeel Yeria	30	P	"	92	8	38	-	-	-	46	9	37	-	-	-	46	92	
66502	Fawzy El Bafery	43	A	"	95	8	38	-	-	-	46	9	31	-	-	-	40	86	
65895	Gameel Mohamed	38	W	"	92	9	32	-	-	-	41	9	35	-	-	-	44	85	
65878	Anter Taoufik	30	P	"	92	7	38	-	-	-	45	9	29	-	-	-	38	83	Illiterate
65138	Sayed Mofey El Dim	40	A	"	90	7	35	-	-	-	42	8	32	-	-	-	40	82	
66544	Heseen Abd El Latis	35	W	"	100	8	36	-	-	-	44	9	26	-	-	-	35	79	
66977	Abd El Tawab	32	H	"	95	8	33	-	-	-	41	8	29	-	-	-	37	78	
65451	Nagy Mohamed Taoufik	46	S	"	95	8	31	-	-	-	39	8	25	-	-	-	33	72	
66011	Mohamed Nageeb	32	S	"	87	6	32	-	-	-	38	7	25	-	-	-	32	70	

Authority		CTA		Examination										Passable 60				
Course 2nd. Session C (for Electricity 2) Course		Theory										Passable 30	Total 100					
Period 1 / Jun / 1985 - 8 Sep / 1985 78 Days		Practice										Passable 30	Total 100					
Number	Name	Age	Post	Job	40			40			40			Sub-total	Sub-total			
					1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd					
Attendance					10			10			10							
					Participation			Participation			Participation							
66054	Mohamed Saied	33	A	Trouble Shooting	96	7	36	-	-	-	43	9	33	-	-	-	42	85
65078	Aly Roskydy	30	P	"	96	7	32	-	-	-	39	7	30	-	-	-	37	76
66956	Matearius Gab Allah	24	H	"	97	6	29	-	-	-	35	7	30	-	-	-	37	72
65893	Hosny Anwar	30	S	Motors	97	7	29	-	-	-	36	8	25	-	-	-	33	69
66466	Abd El Samed Mamed	35	W	"	95	6	30	-	-	-	36	7	25	-	-	-	32	68
66658	Esmat Gorge	25	W	"	97	5	32	-	-	-	37	7	24	-	-	-	31	68
34106	Abou Sereyk Saied Ahmed	26	S	Trouble Shooting	99	7	29	-	-	-	36	8	22	-	-	-	30	66
66778	Farouk Gerges	32	P	"	85	3	19	-	-	-	22	4	19	-	-	-	23	45

Authority CIA

Course 2nd. Session B. (on Electricity 1) Course

Period 1 Oct/1985 - 4 Nov/1985 29 Days

Number	Name	Age	Post	Job	Attendance (%)	Examination										Remarks				
						Theory			Passable 25			Practice			Passable 25			Total		
						10		40		10		40		10			40		Sub-total	
						Partic- ipation	1st	2nd	3rd	Sub- total	Partic- ipation	1st	2nd	3rd	Sub- total					
66464	Jousef Samaan	45	W	Trouble Shooting	100	9	32	-	-	41	9	35	-	-	44	85				
66033	Nabeeh Escender	30	A	"	100	9	36	-	-	45	9	30	-	-	39	84				
65963	Mohamed Megawry	30	P	R.M. Maintenance	97	7	38	-	-	45	7	30	-	-	37	82				
66949	Tantawy Saleh	37	S	"	97	7	35	-	-	42	7	30	-	-	37	79				
66938	Mohamed Ramadan	35	H	"	90	7	35	-	-	42	7	30	-	-	37	79				
66054	Mohamed Saied	33	A	"	97	5	37	-	-	42	5	30	-	-	35	77				
66928	Abd El Latif Kazam	40	H	"	97	7	34	-	-	41	7	28	-	-	35	76				
66784	Armyk Sead	22	P	R.M. Maintenance	93	6	30	-	-	36	6	30	-	-	36	72				
66455	Ied Abd El Ha.ecm.	43	W	Comp. Maintenance	93	6	28	-	-	34	6	30	-	-	36	70				
66947	Marimoud Mofamed Ied	23	S	R.M. Maintenance	93	6	27	-	-	33	6	30	-	-	36	69				

Authority CTA

Course A (Mechanics)

Period 29/Sep/84 - 15/Dec/84 65 Days

Number	Name	Age	Post	Job	Attendance (%)	Examination												Remarks	
						Theory						Practice							Passable 30 total
						Passable 30			Passable 40			Passable 30			Passable 40				
						Participation	1st	2nd	3rd	Sub-total	Participation	1st	2nd	3rd	Sub-total	Participation	1st		2nd
3840	Ahmed Moursy	31	P		97	10	9	26		45	9	7	25		41	86			
65356	Aly Ramadan	49	W		97	10	9	26		45	10	9	28		47	92			
65437	Atia Sadik	31	P		97	9	8	22		39	9	6	15		30	69			
66101	Fouad Hasan	36	S		95	8	8	19		35	8	0	10		18	53	Rejection		
66307	Mohamed Slaah	40	W		97	9	9	19		37	9	9	20		38	75			
66432	Ramadan Mousa	36	S		98	9	8	17		34	9	5	27		31	75	Illiterate		
66555	Kamal Mahmoud	26	S		97	9	6	18		33	8	4	25		37	70			
66701	Aly Abd ElRahman	35	A		95	10	7	21		38	9	2	25		36	74	Illiterate		
66796	Smeer Fathy	25	A		92	9	5	16		32	8	0	15		23	53	Rejection Illiterate		
66939	El Khalie	29	H		95	10	8	23		41	9	7	25		41	82			

Authority: CTA

Course: D (Accommodation Handicraft work)

Period: 1 / Jan / 85 - 15 / Jan / 85 13 Days

Number	Name	Age	Post	Job	Attendance (%)	Examination												Remarks	
						Theory			Passable 30			Practice			Passable 30				Total
						10		40		10		40		10		40			
						Partic- ipation	1st	2nd	3rd	Sub- total	Partic- ipation	1st	2nd	3rd	Sub- total	Partic- ipation	1st		2nd
66183	Mostafa Ahmed	40	W		92	9	33			42	9	18	16		43	85			
66410	Taha Mohamed	49	H		92	10	23			33	10	14	13		37	70			
65934	Mohammady Abd Almola	30	P		62	6	25			31	6	13	12		31	62			
66148	Mohamed Khaleel	29	H		100	10	28			38	10	9	13		32	70			
66180	Mohamed Hanafy	30	A		77	8	25			33	7	17	13		37	70			
65234	Mohamed Aly	30	W		92	9	33			42	9	19	19		47	89			
66299	Geber Abd Alnoby	34	S		92	9	22			31	9	13	9		31	62			
65898	Mohamed Ahamed	35	S		100	9	33			42	9	19	19		47	89			
66420	Saied Saied Aly	33	P		100	10	37			47	10	16	18		44	91	Illiterate		
66338	Saied El Mahdy	34	A		100	10	34			44	10	14	19		43	87			

Authority CTA
 Course F (Lubricating, Measuring, Painting)
 Period 16 Jan '85 - 31 Jan '85 14 Days

Number	Name	Age	Post	Job	Attendance (%)	Examination										Remarks			
						Theory					Practice						Passable 30	Passable 30	Total
						10		40		10		40		Sub-total	Sub-total				
						Partic- pation	1st	2nd	3rd	Partic- pation	1st	2nd	3rd				Partic- pation	1st	2nd
66278	Al Shahat Abd Al Hamed	46	A		100	10	38			48	10	22			32	80	Illiterate		
65024	Nazem Ahamed	34	A		93	9	44			53	9	26			35	88			
65189	Ibrahim Mahmud	35	S		93	9	41			50	9	26			35	85			
66869	Atif Ibrahim	29	H		93	9	44			53	9	24			33	86			
76096	Ergis Malak	35	H		100	10	35			45	10	26			36	81	Illiterate		
66308	Mohamed Mahmud	40	S		93	9	41			50	9	28			37	87	Illiterate		

Authority CTA
 Source E (Blacksmith, Steel metal work)
 Period 2/Feb/85 - 14/Feb/85 12 Days

Number	Name	Age	Post	Job	Attendance (%)	Examination												Remarks									
						Theory						Practice							Passable 30		Total 100						
						Passable 30		Passable 40		Passable 30		Passable 40		Passable 30		Passable 40											
						Participation	1st	2nd	3rd	Sub-total	Participation	1st	2nd	3rd	Sub-total	Participation	1st		2nd	3rd	Sub-total						
16099	Saeid Ganeem	30	H		100	9	41										50	9	24				33	83	Illiterate		
16442	Abd El Tawab	35	H		100	10	41											51	9	24				33	84	Illiterate	
16384	Mohamed Aly	40	A		100	10	34											44	9	25				34	78		
16911	Ahmed Daraysh	33	P		100	9	33											42	9	26				35	77		
15444	Mahmoud Abd El Rabbo	47	A		100	10	43											53	10	26				36	89		
66391	Ataf Sleman	37	S		100	9	37											46	10	27				37	83		
67133	Maher Tamem	32	S		100	10	47											57	10	28				38	95		

Authority CTA

Course A (Mechanics 1)

Period 1 / Jun / '85 - 8 / Sep / '85 78 Days

Number	Name	Age	Post	Job	Attendance (%)	Examination												Remarks	
						Theory						Practice							Total
						Passable 30			Passable 40			Passable 30			Passable 40				
						Partic- pation	1st	2nd	3rd	Sub- total	Partic- pation	1st	2nd	3rd	Sub- total	Partic- pation	1st		2nd
60390	Said Abd El Hafz	39	A	Trouble shooting	100	9	9	20		38	7	8	23		38	76			
65994	Taha Mohamed	55	S	Trouble shooting	97	8	8	14		30	5	6	21		32	62			
66266	Mohamed Afify	48	W	Bogie	97	9	8	21		38	8	8	26		42	80			
66510	Mostafa Ahmed	25	S	Brake equipment	76	5	8	26		39	8	6	20		34	73			
66853	Atif El Shahat	24	P	Air piping	96	5	10	26		41	8	9	24		41	82			
66959	Ramadan Hesain	30	P	Brake equipment	96	7	9	21		37	9	5	20		34	71	Illiterate		
67245	Aly Hesain	29	H	Lubricating	97	7	5	15		27	5	5	6		16	43	Rejection		

Authority C.T.A

Source D (Mechanics 2)

Period 1 Oct/85 - 4 Nov/85 Days

Number	Name	Age	Post	Job	Attendance (%)	Examination										Remarks	
						Theory					Practice						Passable 25 Total 100
						Passable 25		Passable 25		Passable 25		Passable 25		Passable 25			
						1st	2nd	3rd	Sub-total	1st	2nd	3rd	Sub-total	1st	2nd		
65247	Said Abd El Aziez	57	S	Metal work	93	7	7	24	38	7	7	30	37	75	Illiterate		
65238	Mahmoud Abd El Latif	40	S	Metal work	93	8	8	23	39	8	8	40	48	87			
65844	Said Mohamed	25	A	Metal work	93	7	7	11	25	7	7	40	47	72	Illiterate		
65205	Abd El Masah Botros	53	A	Metal work	93	8	9	21	38	8	8	30	38	76			
65455	Said Othman	45	W	Blacksmith	75	8	7	24	39	8	8	36	44	83			
65241	Ahmed Rashwan	57	W	Metal work	93	7	8	15	30	7	7	24	31	61	Illiterate		
66764	Tarek Noman	24	P	Mechanics	93	8	10	25	43	8	8	40	48	91			
65635	Abd Allahied	53	P	Mechanics	93	7	7	18	32	7	7	21	28	60			
67094	Ahmed Mohamed	25	H	Metal work	93	7	9	21	37	7	7	30	37	74			
66971	Wageha Rofaie	25	H	Welding	51	6	10	-	16	6	6	-	6	22	Rejection		

(2) Project History 1983 - 1985

1983	4	5	6	7	8	9	10	11	12	1984
3										1
										2

Long-Term Experts (SANO, SATO, KUMACAI, INOUE)
Mar.1, 1983 - Feb.28, 1985

EGYPT-JAPAN
TECHNICAL COOPERATION
CTA TRAMCAR TRAINING
CENTER PROJECT
JUNE 9 '83-JUNE 8 '86

JAPANESE EXPERTS

EQUIPMENT DONATION
(LOCAL TRANSPORTATION)

COUNTERPART TRAINING
IN JAPAN

TEXTBOOK ENGLISH
ARABIC

LOCAL COST FEE by JICA

TECHNICAL TRANSFER
THE TEAM - CTA

MEASURES
BY EGYPTIAN SIDE

STEERING COMMITTEE
JOINT COMMITTEE

JAPANESE INVESTIGATION
MISSION

OTHERS

5/20 SEA No.1(19-015) 8/7 SEA No.2(19-016) 10/1 SEA No.3(19-018) 11/13 SEA No.4(YHAL-0011) 1/16
 7/26 SEA No.2(19-016) 9/5 AIR No.1(125-9985-2090) 10/5
 7/10 AIR No.2(055-2054-1356) 10/19
 8/22 AIR No.2(055-2054-1356) 10/27
 3/15 (ANB055-19547430)
 4/4
 4/1 English Textbook Arrangement (Preparation, Drafting etc.)
 Draft lost by Mr. Hafeez
 10/20 Arabic Textbook Arrangement
 (Translation: English - Arabic)

8/25 Engineer (2) Ashour Taha
 Transportation Bureau JICA
 Toshiba Corporation
 Kinki Sharyo Co., Ltd.
 JNR, JICA

Encouraging CTA to
complete the Center building

6/12 Training for Trainers(Engineer)

11/19 Training for Trainers(Chief worker)

Arrangement of the Center

8/22 A Counterpart Replaced
Rafeeq - Awad

11/19 New Chairman
Sherazy - Awad

6/11 Steering Committee (No.1)

11/15 Steering Committee (No.2)
(Joint Committee (No.1))

11/7 Japanese Mutual Consultation Mission

----- Submergence (the Center Basement) -----

2	3	4	5	6	7	8	9	10	11	12
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Coordinator (Yamazaki)
Mar. 1 1984 - Feb. 25, 1986

SEA No. 6 (KBAL-0003)
11/26 ----- 12/17

SEA No. 5 (KBAL-0011) ----- 8/23

5/5 AIR No. 3 (214-99331030) ----- 6/12

3/5 AIR No. 4 (082-39493825) ----- 9/9

5/10 Engineer (2) Kamal Awad ----- 7/27

10/21 Dawoud ----- 11/5
General Manager of Francar Sector

Textbooks: Editing, Printing & Binding

JICA Allocation for the Textbooks

JICA Allocation of the Transport Fee (Short-Term Experts)

Arrangement of Worker Course (Curriculum & Schedule)

Study on the Arrangement of Simulator System

CTA Worker Course (1st Session) ABCDEF

7/25 New General Manager (Francar Sector) Gaszar - Dawoud

10/3 CTA Final Decision on Simulator Arrangement

CTA Presents a New Place for the Simulator System

The Center New Building Commencement of Modification Construction

11/17 Steering Committee (No.3) (Joint Committee (No.2))

11/11 ----- 11/19 Japanese Advisory Survey Mission

9/25 Former General Manager Francar Sector (Gaszar) Died

6/20 Explosion of a Near Gunpowder Magazine Heavy Damage to the Center

1985	2	3	4	5	6	7	8	9	10	11	12	1986
1												1

Long-Term Expert(Oinuma) Feb.3 1985-Jun.7 1985
 Long-Term Expert(Saeki) Apr.7 1985-Jun.7 1985

Duty Extension(Sano) ~Apr.30 1985; Kumagai & Inoue ~Jun.7 1986

2/3 ~ Short-Term Experts(Seo, Oveda, Tanaka) ~ 5/2

SEA No.7(KBAL-0005)

9/15 ~ 10/1

1/31 Chief-Worker(2) Hedar, Muhammad
 ~~~~~ 3/27

6/9 Chief-Worker(3) Aly Adel Shabby  
 ~~~~~ 7/30

Textbooks Completed (English 3 Vol; Arabic 4 Vol.)

JICA Allocation of the Transport Fee (Short-Term Experts)

JICA Allocation for Opening Ceremony

JICA Allocation of the Transport Fee (Short-Term Experts)

2/15

6/1

Supplementary Training (Engineers, Chief-Worker) on Simulator and Test Rack

10/1

Higher Course (Engineers)

11/4

CTA Worker Course (3rd Session) M, E, K, 1, 2, 1, 2

Preparation for Helopolis Worker Course

12/18

Helopolis Worker Course

Simulator Hall Completed

11/30 Steering Committee (No.4) (Joint Committee (No.3))

11/14 ~ 11/22

4/10 Simulator Hall Opening Ceremony (Cancelled)

Japanese Evaluation Survey Mission

Public Relations Pamphlet

4/27 Opening Meeting

Damage on SEA No.7

Public Relations Pamphlet (No.2)

**(3) Tentative Training Schedule of the Center
(June 1985 - 1987)**

| | | | | | | | 8 | | | | | | | 9 | | | | | | | 10 | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|--------------------------------------|----------------------------------|-------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----|---|---|----|----|----|----|----|----|---|---|---|----|----|----|----|----|----|
| 3 | 8 | 10 | 15 | 17 | 22 | 24 | 31 | 5 | 7 | 12 | 14 | 19 | 21 | 26 | 31 | 2 | 7 | 9 | 14 | 16 | 21 | 23 | 28 | 30 | 4 | 6 | 11 | 13 | 18 | 20 | 25 | 27 | 2 | 4 | 9 | 11 | 16 | 18 | 23 | 25 | 30 |
| 7/1 | 15 | 30 | 27 | 25 | 27 | 30 | (CPA+Hello+Alex)
(More than 350#) | M. I. & E. T. | 9/1 | (CPA)
(Hello)
(Alex) | 9/30 | M. 2. & 8. | 10/18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 th / ₅₇ | 28 th / ₅₇ | 17 th / ₅₇ | 28 th / ₅₇ | 17 th / ₅₇ | 28 th / ₅₇ | 17 th / ₅₇ | 28 th / ₅₇ | 20 th / ₅₇ | 27 th / ₅₇ | 25 th / ₅₇ | 27 th / ₅₇ | 17 th / ₅₇ | 28 th / ₅₇ | 17 th / ₅₇ | 20 th / ₅₇ | 27 th / ₅₇ | 25 th / ₅₇ | 27 th / ₅₇ | 17 th / ₅₇ | 28 th / ₅₇ | 17 th / ₅₇ | 20 th / ₅₇ | 27 th / ₅₇ | | | | | | | | | | | | | | | | | | |
| | Labour's day (1) | | | | | | Ramadan Feast (7-9) | Revolution Memory | The day before Bayram Feast (17-17) | | | | | Moslem's New Year | | Military Force day | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5/9 th (Ramadan) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | 187 | | | 1 | | | 2 | | | 3 | | | 4 | | |
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| 11 | 11 | 29 | 27 | 25 | 23 | 21 | 19 | 17 | 15 | 13 | 11 | 9 | 7 | 5 | 3 | 1 |
| 8 | 8 | 22 | 20 | 18 | 16 | 14 | 12 | 10 | 8 | 6 | 4 | 2 | 12 | 10 | 8 | 6 |
| 6 | 6 | 15 | 13 | 11 | 9 | 7 | 5 | 3 | 1 | 31 | 29 | 27 | 25 | 23 | 21 | 19 |
| 3 | 3 | 8 | 6 | 4 | 2 | 12 | 10 | 8 | 6 | 4 | 2 | 12 | 10 | 8 | 6 | 4 |
| 30 | 30 | 27 | 25 | 23 | 21 | 19 | 17 | 15 | 13 | 11 | 9 | 7 | 5 | 3 | 1 | 30 |
| | | 17/16 | 15/16 | 13/16 | 11/16 | 9/16 | 7/16 | 5/16 | 3/16 | 1/16 | 31/16 | 29/16 | 27/16 | 25/16 | 23/16 | 21/16 |
| | | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) | (CTA+Helio+Alex) |
| | | 17/16 | 15/16 | 13/16 | 11/16 | 9/16 | 7/16 | 5/16 | 3/16 | 1/16 | 31/16 | 29/16 | 27/16 | 25/16 | 23/16 | 21/16 |
| | | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') |
| | | 12/10 | 10/10 | 8/10 | 6/10 | 4/10 | 2/10 | 30 | 27 | 25 | 23 | 21 | 19 | 17 | 15 | 13 |
| | | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) | M 1 & E 1 (CTA+Helio+Alex) |
| | | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 | 3/5 |
| | | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) | (CTA) |
| | | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) | (Helio) |
| | | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) | (Alex) |
| | | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 |
| | | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 | M 2 & E 2 |
| | | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') | (More than 120') |
| | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 |
| | | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| | | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 |
| | | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | 17 th | 15 th | 13 th | 11 th | 9 th | 7 th | 5 th | 3 th | 31 st | 29 th | 27 th | 25 th | 23 rd | 21 st | 19 th |
| | | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 |
| | | 16 th | 15 th | 15 th | 15 th | 15 th | 15 th | 15 th | 15 th | 15 th | 15 th | 15 th | 15 th | 15 th | 15 th | 15 th |
| | | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 | 3/21 |
| | | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day | Spring day |
| | | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat | Sinat |
| | | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty | Liberty |
| | | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 | day 4/28 |
| | | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| | | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| | | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 | 11 |

| | | | | | | | 5 | 6 | | | | | 7 | | | | | 8 | | | | | 9 | | | | | 10 | | | | | | | | | | | | | | | | | | |
|---|---|---|----|----|----|----|----|----|---|---|----|----|----|----|----|----|---|---|---|----|----|----|----|----|---|---|----|----|----|----|----|----|---|---|---|----|----|----|----|----|----|----|---|--|--|--|
| 2 | 7 | 9 | 14 | 16 | 21 | 23 | 28 | 30 | 4 | 6 | 11 | 13 | 18 | 25 | 28 | 30 | 1 | 6 | 8 | 15 | 20 | 22 | 27 | 29 | 3 | 5 | 10 | 12 | 17 | 19 | 24 | 26 | 1 | 3 | 8 | 10 | 15 | 17 | 22 | 24 | 29 | 31 | 5 | | | |
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7/1 M 1 & E 1 (CTA, Heli, Alex)
 10:30 (More than 350')

9/1 (CTA)
 27 (Heli)
 (Alex)

9/30

11/1

5/25 Labour's Day (27) (Ramadan)

5/28 Ramadan Feast (26-28)

6/1 Scale day

6/5 Revolution Memory

6/8 The day before Bayram Feast (3) Bayram Feast (4-7)

6/15 Moslem's New Year

6/28 Military Force day

**(4) In-service Trams in Egypt
(Japanese Connection)**

E = MADE AT SEMAF (EGYPT)

| YEAR | CONTRACTS | C T A
Cairo Transport Authority
カイロ市交通局 | HELIO
Heliopolis Company for Housing
and Development
ヘルイオ建設公社 | A P T A
Alexandria Passenger Transport
Authority
アレキサンドリア市交通局 |
|-------|-----------|--|--|--|
| 1962 | | | (1st) 0 *20
[Mc] | |
| 1966 | | | (2nd) 50 *15
[Mc] [Mc] | |
| 1971 | | | (3rd) 37 * 3
[Mc] [M] [Mc] | |
| 1975 | | | (4th) 32
[Mc] [M] [M] [Mc] | |
| | | | (5th) 29
[Mc] [M] [T] [Mc] | |
| 1976 | | | (6th) 36
[Mc] [M] [T] [Mc] | (1st) 24
[Mc] [M] [Mc] |
| 1977 | | Helwan line
(1st) 210
E=100
[Mc] [T] [Mc] | | (2nd) 42
[Mc] [M] [Mc] |
| 1979 | | City line
(2nd) 160
E=100
[Mc] [Mc] | (7th) 36
[Mc] [M] [T] [Mc] | |
| 1980 | | (3rd) 30
[Mc] [Mc] | | (3rd) 42
[Mc] [M] [Mc] |
| | | (4th) 50
E= 16
[Mc] [Mc] | | |
| 1981 | | (5th) 30
[Mc] [Mc] | | |
| 1982 | | | (8th) 15
[Mc] [M] [Mc] | (4th) 12
[Mc] [Mc] |
| 1983 | | | (9th) 9
[Mc] [M] [Mc] | (5th) 18
[Mc] [Mc] |
| | | | (10th) 15
[Mc] [M] [Mc] | E= 10 |
| TOTAL | 480 | 258 *38 | Out of Use
外敷の廃車も不可 | 138 |

(5) CTA Tramcar Service Line

CTA TRAMCAR SERVICE LINE

OCTOBER 31 1985

Shoubra Garage

| Line | | Km. |
|-------|---|------|
| No. 6 | El Mabyada - Abu El Farag - Shanan - Abd El Muniam Riad | 10.2 |
| 7 | Esco - Ahmad Helmy - | 9.4 |
| 12 | 26 July - Abu El Farag - Shoubra - Hadaiq El Qubba | 25.2 |
| 14 | Matariya - Sharikat - Shoubra - Abd El Muniam Riad | 29.0 |
| 16 | Mabyada - Roda El Farag - Shoubra - Abd El Muniam Riad | 8.0 |
| 16' | Mabyada - Abu El Farag - Ramses | 8.0 |
| 20 | Shoubra - Galaa - Ramses | 11.6 |
| 23 | 26 July - Saptiya - Ramses | 5.4 |

Port Said Garage

| | | |
|-----|---|------|
| 15 | Matariya - Port Said St. - Ataba - Mohamed Aly St. - Saida Zainab | 26.2 |
| 15' | Matariya - Port Said St. - Muski | 20.0 |
| 19 | Hadaiq - Ataba - Abd El Aziz St - Abu Reesh | 23.2 |
| 19' | Hadaiq - Matariya | 14.4 |
| 18 | Matariya - Ataba | 20.0 |

Abbasiya Garage

| | | |
|----|---|------|
| 1 | Abbasiya - Ataba - Abd El Aziz St. - Abu Reesh | 17.0 |
| 4 | Saida Zainab - Maglis El Shaab - Nubaal - Ataba | 7.5 |
| 10 | Abu Reesh - Falaki | 6.5 |
| 21 | Abbasiya - Faggaala - Ramses | 8.6 |
| 22 | Abbasiya - Port Said - Saida Zaynab | 13.7 |

Helwan Garage

| | | |
|----|------------------------------|------|
| 40 | Helwan - Maraziq | 20.3 |
| 41 | El Ezba El Qibriya - Maraziq | 17.5 |

JICA