

BASIC DESIGN STUDY REPORT  
ON  
THE PROJECT FOR REPLACING  
A TRAINING VESSEL  
IN  
THE ARAB REPUBLIC OF EGYPT

DECEMBER 1989

JAPAN INTERNATIONAL COOPERATION AGENCY

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ON  
THE PROJECT FOR REPLACING  
A TRAINING VESSEL  
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## PREFACE

In response to the request of the Government of the Arab Republic of Egypt, the Government of Japan has decided to conduct a Basic Design Study on the Project for Replacing a Training Vessel in the Arab Republic of Egypt and entrusted the study to the Japan International Cooperation Agency (JICA). JICA sent to Egypt a survey team headed by Mr. Masatsugu Kimura, Director of Research Division, Research and Investigation Bureau, Institute for Sea Training, Ministry of Transportation from August 11 to August 30, 1989.

The team exchanged views with the officials concerned of the Government of Egypt and conducted a field survey in Alexandria area. After the team returned to Japan, further studies were made. Then, a mission was sent to Egypt in order to discuss the draft report and the present report has been prepared.

I hope that this report will serve for the development of the Project and contribute to the promotion of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Arab Republic of Egypt for their close cooperation extended to the team.

December, 1989

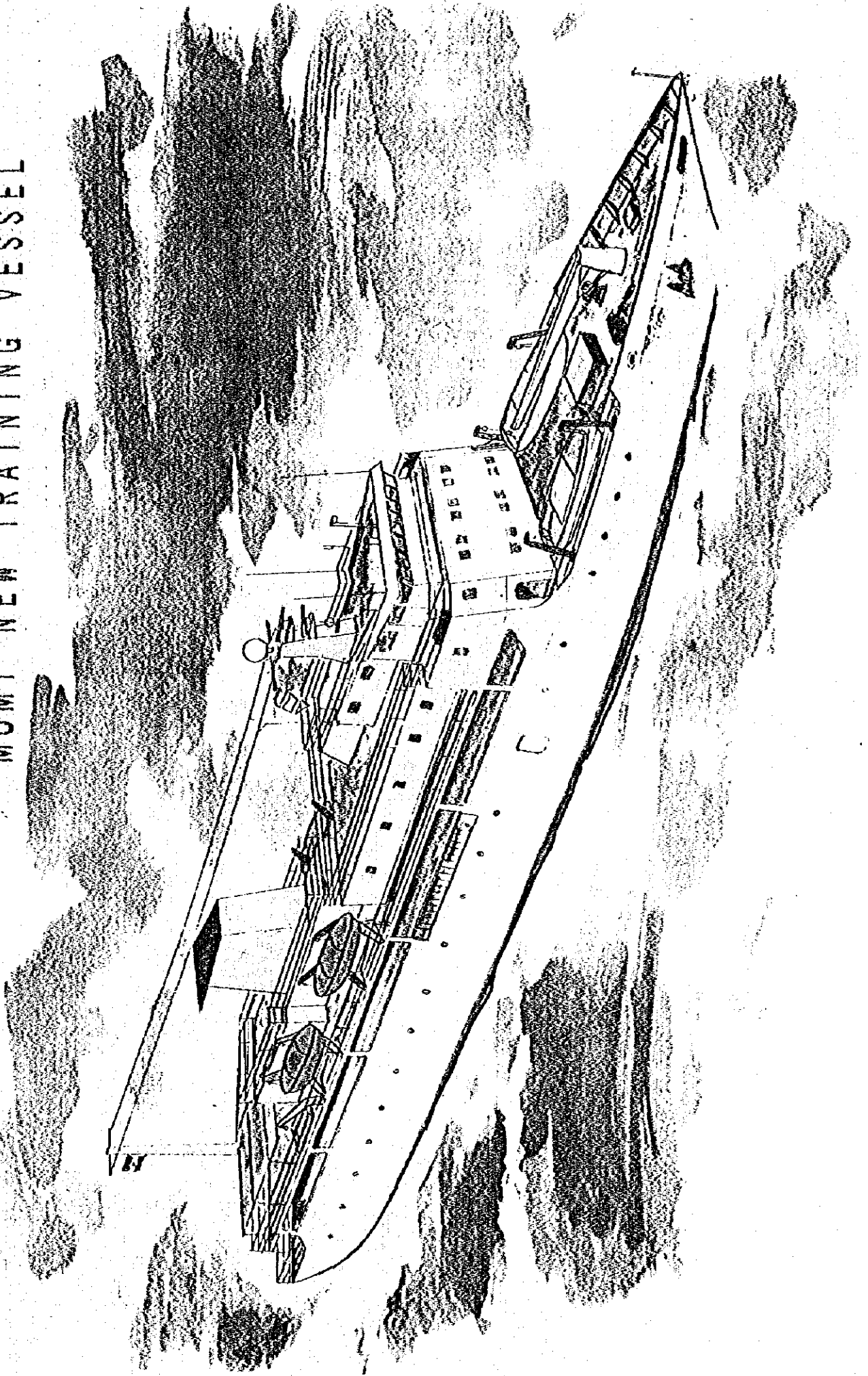


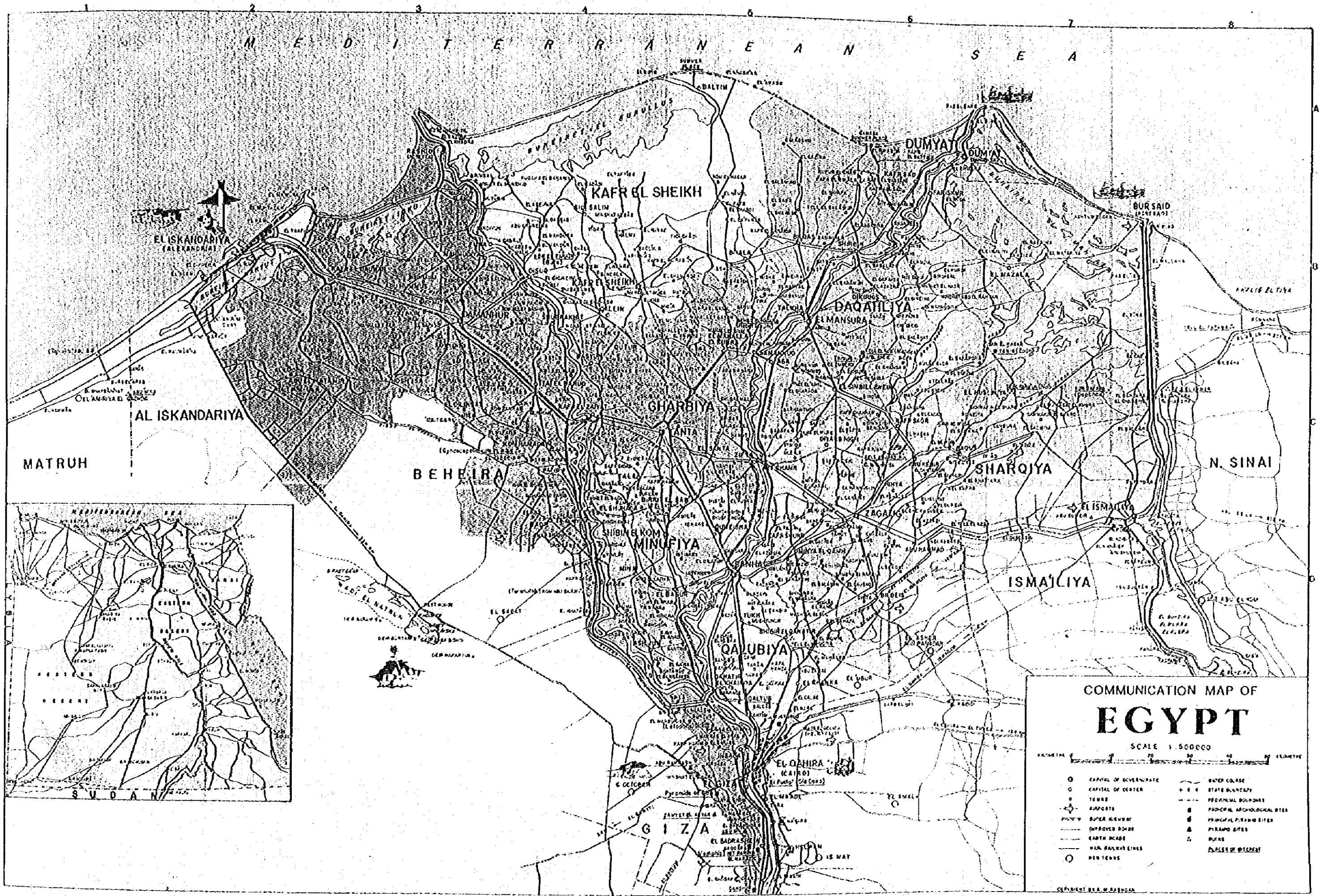
Kensuke Yanagiya  
President

Japan International Cooperation Agency



MOMT NEW TRAINING VESSEL





M E D I T E R R A N E A N S E A

EL ISKANDARIYA (ALEXANDRIA)

KAHR EL SHEIKH

DUMYAT

BUR SAID

AL ISKANDARIYA

MATRUH

BEHEIRA

GHARBIYA

BAQAHLIYA

SHARQIYA

N. SINAI

ISMA'ILIYA

MINUFIYA

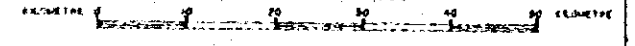
QALUBIYA

EL QAHIRA (CAIRO)

GIZA

COMMUNICATION MAP OF EGYPT

SCALE 1:500000



- CAPITAL OF GOVERNORATE
- CAPITAL OF CENTER
- TOWNS
- ✈ AIRPORTS
- SUPER HIGHWAY
- IMPROVED ROADS
- EARTH ROADS
- HIGH RAILWAY LINES
- NEW TOWNS
- WATER COURSE
- STATE BOUNDARY
- PROVINCIAL BOUNDARY
- PRINCIPAL ARCHAEOLOGICAL SITES
- PRINCIPAL PYRAMID SITES
- ▲ PYRAMID SITES
- BAYS
- PLACES OF INTEREST

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## SUMMARY



## SUMMARY

The Government of the Arab Republic of Egypt, considering that the marine transportation industry plays a very important role in the promotion of its social and economic development due to its geographical conditions, prioritizes the development of the marine transportation industry as one of the most important targets in the national development plan. On the other hand, currently in the country there is a shortage of personnel who can support the marine transportation industry. It is an important target of the national plans of other countries as well in the Middle East to educate and train personnel who can support their marine transportation industries.

Against the background mentioned above, the Arab League, which is the conference panel among the countries in the Middle East, established the Arab Maritime Transport Academy (hereinafter referred to as AMTA) in Alexandria, Egypt, in 1972 for the purpose of training the seafarers aiming at increasing the own flag transportation of crude oil and further improving the balance of trade. Up to 1989 since its establishment, AMTA has received approximately 30,000 cadets from not only the Arab Republic of Egypt and the Middle East countries but also Africa to educate for service on ocean-going vessels.

Now AMTA trains approximately 2,200 cadets a year from 46 different countries based on international conventions such as the STCW Convention, and provides an independent training service as one of the few institutes for seamen's training in the Middle East and Africa.

However, the training vessel which has been used for on-board training is quite deteriorated and requires a huge budget for maintenance every year. In addition, the vessel does not have enough space for training, since it was not designed as a

training vessel. These are bringing about difficulties for on-board training. In addition to the training of seafarers, the vessel has also been carrying out maintenance service (supply of goods, change of personnels, etc.) for four lighthouses in the Red Sea so as to ensure safe voyage in this area.

Against this background, the Ministry of Maritime Transport of the Arab Republic of Egypt and AMTA have planned "The Project for Replacing a Training Vessel in the Arab Republic of Egypt" for the purposes of training the cadets of AMTA and maintaining the lighthouses at the same time, and have requested that Japan provides grant aid for the construction of the training vessel.

The Government of Japan decided to conduct a preliminary study to confirm the background and the contents of the request, and to study the possibility of cooperation for the Project. Japan International Cooperation Agency (JICA), entrusted by the Government of Japan, sent a preliminary study team in June 1989 to have discussions with the persons concerned of the Government of the Arab Republic of Egypt and AMTA, and signed the minutes of the meetings thereof. Further, a basic design survey team was sent to Egypt from August 11 to August 30, 1989, based on the result of the preliminary study, in order to study the optimum size and the components of the vessel. The basic design survey team had a series of discussions with the persons concerned of the Government of the Arab Republic of Egypt and AMTA in Cairo and Alexandria based on the basic understandings in the preliminary study, and conducted investigations necessary for a basic design, including the survey of the home port for the new training vessel and the present conditions of the existing vessel.

After the draft was prepared based on the results of the investigations, a second basic design survey team was sent to Egypt from November 1 to November 12, 1989, to explain the

draft to and to obtain confirmation from the representatives of the Government of the Arab Republic of Egypt and AMTA.

The outline of the results of the investigation is as follows:

- (1) AMTA, the implementing organization of the Project, is one of the most developed educational institutes in the Arab/Africa region, and declares an active policy for the improvement of seafarers' techniques, which are required for the operation of modern vessels and also for the requirements of the STCW Convention. For realizing its policy, AMTA maintains effective educational and training programs.

Furthermore AMTA is expected to supply many educated seafarers for the country's merchant fleet, which is to be rapidly reinforced, and also to respond to the demand, as an international training body, for training of seafarers from the countries in the Middle East and Africa.

- (2) Although the existing vessel (AIDA III) has been maintained and managed properly by AMTA, it has been 28 years since its construction, and it is deteriorated and requires frequent repair of its hull, engines and so on. The time and the expenses for repair increase every year, resulting in an obstacle for effective training service.
- (3) The machinery and equipment (for training) granted by Japan have been used effectively and properly, and AMTA has adequate training staff, receiving technical assistance from various countries including Japan. They have enough technology and staff to operate the existing vessel.
- (4) As to the purpose of the new training vessel, the voyage for the maintenance of four lighthouses, which has been done by using the existing vessel, gives the seafarers a very effective training opportunity, and it is therefore

desirable to have both functions; training as the primary purpose, and maintenance of the lighthouses as the secondary purpose.

In this basic design, the optimum scale of the vessel was conceived so that the education and training by AMTA can be provided for the seafarers to achieve their technical level to the standard set forth in the STCW Convention, in consideration of the above-mentioned present situation and the demand of the seafarers required in Egypt and other Arab and African countries.

The outline of the basic design is as follows:

Principal Dimension

Length overall	abt. 86.00 m
Length between perpendicular	73.00 m
Breadth moulded	14.50 m
Depth, upper deck	9.50 m
Draft designed	5.00 m
Deadweight (on design draft)	abt. 1,400 t
Gross tonnage	abt. 3,000 t
Service speed	abt. 13.5 knots
Main engine	Diesel engine ... 2
	Maximum output
	... 1,500 ps x 700 rpm
Generator	350 KVA, 50 HZ, 380 V ... 3
	Diesel engine driven
	(abt. 420 ps x 1,000 rpm)

Complement

Ship operation part	58 persons (Officer 13,
	Crew 44,
	Pilot 1
	persons)



Training part	180 persons (Instructor & Assistant 20, Trainee 160 persons)
Lighthouse part	32 persons (Officer 16, Worker 16 persons)

---

Total 270 persons

It is expected to draw up the execution drawings, qualification and bidding documents for shipbuilding within about 5 months and to sign a shipbuilding contract within about 2.5 months after the bidding. The vessel will be constructed and completed in approximately 14 months in Japan after the conclusion of a building contract, and will be transported to the port of Alexandria in the Arab Republic of Egypt for the delivery to Egypt after about 30 days' navigation.

After delivery the vessel will be operated and maintained jointly by the Ports and Lighthouses Administration of the Ministry of Maritime Transport and AMTA, which is the same as for the existing vessel, and in the light of their long-term cooperative relationship, problems are not expected to arise between the two parties. As to the expenses for operation and maintenance of the vessel, the Ports and Light Houses Administration and AMTA will bear an amount equivalent to 830 thousand U.S.\$ a year. Approximately 95 thousand U.S. \$ out of the above total amount is appropriated to the expenses for the maintenance of the vessel itself.

Upon implementation of the Project, Egypt has decided to allocate an exclusive berth for the vessel in the Port of Alexandria and to provide the required facilities such as mooring facility, loading facilities for fuel oil and fresh water, etc.

To use the new training vessel effectively and in safety, it is necessary to understand fully the functions of the vessel and to acquire the skills required for its operation and maintenance. For this purpose, Japan will provide technical assistance by training the vessel's seafarers in Japan and by dispatching Japanese technical instructors for the first stage to Egypt.

The realization of the Project with Japanese grant aid will generate the following benefits:

Responding to the demand for seafarers in not only Egypt but other Arab and African countries, well-trained seafarers can be furnished to each country, thereby enabling each country to fulfill its national policy of expanding international trade by developing its national maritime industry and increasing maritime transportation capacity, which is declared as one of the important problems under the national plans.

Furthermore, the supply of many excellent seafarers will help to improve the operational efficiency of vessels and to reduce disasters and accidents at sea.

Taking into consideration all of the above, the Project is very reasonable, and is evaluated to be viable and remarkably significant for the grant aid of Japan.

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## A b b r e v i a t i o n s

AMTA	Arab Maritime Transport Academy
DWT	Dead Weight Tonnage
EN	Exchange Note
GDP	Gross Domestic Product
GT	Gross Tonnage
IMO	International Maritime Organization
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
LE	Egypt Pound
LRS	Lloyd's Register of Shipping
MOMT	Ministry of Maritime Transport
NK	Nippon Kaiji Kyokai
PQ	Pre-qualification
SOLAS	International Convention for the Safety of Life at Sea
STCW	International Convention on Standard of Training, Certification and Watchkeeping for Seafarers
UNDP	United Nation Development Program
USAID	United States Agency for International Development





# CHAPTER 1 INTRODUCTION



## CHAPTER 1 Introduction

The Government of the Arab Republic of Egypt, considering that the marine transportation industry plays a very important role in the promotion of its social and economic development due to its geographical conditions, prioritizes the development of the marine transportation industry as one of the most important targets in the national development plan. On the other hand, currently in the country there is a shortage of personnel who can support the marine transportation industry. It is an important target of the national plans of other countries as well in the Middle East to educate and train personnel who can support their marine transportation industries.

The Arab Maritime Transport Academy (hereunder called AMTA), which is located at Alexandria in the Arab Republic of Egypt, was established in 1972 to augment marine transportation in the Middle East and Africa. As the only senior maritime transport training institute in these areas, AMTA has since trained some 30,000 cadets from various countries of Middle East and Africa as well as from Egypt.

The problem is that the training vessel now in use (AIDA III, 2,733 tons) is already 28 years old and remarkably deteriorated. The necessary spare parts are difficult to obtain and also troubles have frequently occurred. This training program has therefore difficulties in implementation, and the Egyptian Government considers it urgent to replace this training vessel, which is serving as a lighthouse supply vessel as well.

The distressed situation greatly affects not only Egypt but also other countries who rely on AMTA for education. So based on this urgency, the Japanese Government was requested to extend grant aid for the construction of a new training vessel.

Having received the request, the Japanese Government decided to conduct a preliminary study, and JICA dispatched, from June 8 to June 18, 1989, a preliminary study team, headed by Mr. Masatugu Kimura, Director of Research Division, Research and Investigation Bureau of Institute for Sea Training, which is under the jurisdiction of the Ministry of Transportation.

The preliminary study team for the project to construct a new training vessel for AMTA had a series of discussions on the background and the contents of the request, and the implementation structure, and also investigated the present situation of AMTA and the present training vessel (AIDA III). The team studied the project viability and prepared policies for the basic design survey.

After studying the policies for the basic design survey, the Japanese government has decided to conduct a basic design for the project to construct a new training vessel for AMTA, and JICA dispatched a basic design survey team headed by Mr. M. Kimura, who was leader of the preliminary study team, during the period from August 11 to August 30, 1989.

Surveys by the team were made at Cairo where the offices of the Government are situated, and also at Alexandria where Ministry of Maritime Transport, Ports and Lighthouses Administration and AMTA are located. The survey team had discussions with the parties concerned to grasp the background of their project and its contents, and also explained about Japanese grant aid. The team signed the minutes of the discussions with the representatives of the Government of the Arab Republic of Egypt.

After returning to Japan the team reviewed all the data and contents of the discussions. Based on the survey result, they prepared a draft. Another team headed by Mr. M. Kimura, who was leader of the previous two teams, was dispatched to Egypt from November 1 to November 12, 1989, in order to explain to

and obtain confirmation from the Egyptian authorities on the draft of the final report. This team signed the minutes of discussions held with representatives of the Arab Republic of Egypt.

This report has been prepared as the final report on the basic design survey for the project to construct a new training vessel for AMTA in the Arab Republic of Egypt.

Refer to the appendixes for the members of the team, the names of the participants in the meeting, and the investigation tour schedule.



## **CHAPTER 2 PROJECT BACKGROUND**





## CHAPTER 2 Project Background

### 2.1 Outline of The Arab Republic of Egypt

#### (1) Summary

The Arab Republic of Egypt is facing the Mediterranean Sea and the Red Sea and situated suitable place for civilization, traffic and trade where is the point of intersection of Europe, Asia and Africa. Alexandria Port has kept its role as one of the most important commercial ports in the world, through the Roman Empire Era since its opening by Alexander the Great before the Common Era. Its importance has been intensified by the opening and subsequent nationalization of the Suez Canal.

In 1974 President Sadat declared an open-door policy and introduced the economic liberalization policy. The oilboom after the 4th Middle East War and the rapid increase in petroleum production in Egypt gave rise to economic conditions favourable to the promotion of such a policy. Under such circumstances, remarkable development was achieved in the fields of petroleum, Suez Canal, commerce and finance, which resulted in the high growth of the Egyptian economy. Together with the increase in GDP, international trade has expanded. As the international trade in Egypt depends mainly on the maritime trade, the shipping industry has the important role, and great importance is attached to its further development.

Table 1, 2.1 shows the transition of GDP, and the amount and balance of trade in Egypt.

Transportation of the maritime cargo by Egyptian vessels was 10% of its total amount in 1984, however, according to the 2nd Five-year Plan, the target is 40% in 1991 and more than 75% in the 21st century.

2.1 TABLE 1  
 NOMINAL GDP AND AMOUNT AND BALANCE OF TRADE IN EGYPT

(IN MILL LE)

YEAR	NOMINAL GDP	GROWTH RATE OF GDP *1	AMOUNT OF EXPORT	AMOUNT OF IMPORT	BALANCE OF TRADE	AGAINST GDP (%)	
						EXPORT RATE	IMPORT RATE
1975	5,247	---	549	1,539	-991	10.5	29.3
1976	6,705	27.8	596	1,490	-894	8.9	22.2
1977	8,210	22.4	669	1,884	-1,216	8.1	23.0
1978	9,788	19.2	680	2,632	-1,952	6.9	26.9
1979	12,610	28.8	1,288	2,686	-1,398	10.2	21.3
1980	15,546	23.3	2,133	3,402	-1,269	13.7	21.9
1981	17,149	10.3	2,263	6,147	-3,884	13.2	35.8
1982	20,881	21.8	2,184	6,355	-4,170	10.5	30.4
1983	24,834	18.9	2,250	7,193	-4,943	9.1	29.0
1984	28,600	15.2	2,198	7,536	-5,338	7.7	26.4
1985	34,211	19.6	2,600	6,973	-4,373	7.6	20.4
1986	38,211	11.7	2,054	8,052	-5,998	5.4	21.1
1987	44,050	15.3	3,076	11,359	-8,283	7.0	25.8
1988	---	---	4,094	16,309	-12,214	---	---

\*1 AGAINST PREVIOUS YEAR

SOURCE IMF

(2) Trade Situation

Egypt's major exports are crude oil and petroleum products, followed by raw cotton, textile products, oranges, etc., while its imports include grains, cement, wood, industrial goods and half-finished goods.

Table 2, 2.1 shows the data of international maritime transportation in Egypt.

2.1 TABLE 2

MARITIME TRANSPORTATION IN EGYPT (1,000 TONS)

YEAR	IMPORT	EXPORT	TOTAL	TOTAL RATIO AGAINST 1975
1975	4,080	13,452	17,532	1.00
1976	3,396	12,432	15,828	0.90
1977	9,300	14,508	23,808	1.36
1978	6,900	12,360	19,260	1.10
1979	7,980	10,212	18,192	1.04
1980	8,820	11,496	20,316	1.16
1981	13,488	25,596	39,084	2.23
1982	12,672	44,688	57,360	3.27
1983	10,944	33,084	44,028	2.51
1984	13,032	34,260	47,292	2.70
1985	12,120	32,940	45,060	2.57
1986	12,804	39,612	52,416	2.99
1987	12,792	27,852	40,644	2.32

The total ratio against 1975 in this table shows the ratio of the total amount of maritime transportation of import and export in each year to the amount in 1975, which is regarded as 1.00. It shows that the amount of transportation more than doubled during these 10 years.

### (3) National Development Plan

The 2nd Five-year Plan (until June 30, 1992) started on July 1, 1987. This plan was made on the basis of the long-term development plan (1982/83- 2001/02), which was the guideline of the 1st Five-year Plan.

Improvement of shipping infrastructure had been pointed out as one of the important subject in the 1st Plan (1982/83 - 1986/87) and, under the policy of positive introduction of foreign capital, a large-scale expansion of port facilities and rapid increase in its own merchant fleet had been effected. Table 3, 2.1 shows transition in number and gross tonnage of Egyptian registry vessels since 1975. As the available statistics is the vessels of 100 gross tons or over, coastal ships and fishing ships are included in this number, however we can recognize the continuous expansion of tonnage, from this table.

The basic policies mentioned in the 2nd Five-year Plan are (1) increase in merchandise goods production, (2) improvement in productivity and quality, (3) promotion of tourist industry, (4) selection of projects and (5) assistance to private sector. The following plan is indicated for marine transportation among the investment plans for materializing these basic policies.

As a base of the plan to expand the port facilities for increasing cargo handling capacity in parallel with the trade expansion program, the target amount for annual cargo handling is planned to increase 23% from the 31,000 tons

2.1 TABLE 3

## TRANSITION OF EGYPTIAN REGISTRY VESSELS

YEAR	NO.	GT	RATIO AGAINST 1975	
			NO.	GT
1975	143	301,333	1.00	1.00
1978	205	456,291	1.43	1.51
1979	243	541,721	1.70	1.80
1980	278	555,786	1.94	1.84
1981	307	599,042	2.15	1.99
1982	341	635,801	2.38	2.11
1983	351	662,567	2.45	2.20
1984	390	778,591	2.73	2.58
1985	399	952,644	2.79	3.16
1986	422	1,063,020	2.95	3.53
1987	428	1,074,192	2.99	3.56
1988	431	1,226,725	3.01	4.07

SOURCE LLOYDS LIST (100GT OR OVER)

set in the 1st Five-year Plan to 38,200 tons by fiscal 1991/92, the final year of the 2nd Five-year Plan. In Table 4, 2.1, the port expansion plan is listed. The port expansion plan intends also to expand the capacity of the port facilities in ports other than Alexandria and Port Said, and to rationalize secondary inland transportation to avoid concentration of cargo to Alexandria.

2.1 TABLE 4

## FIVE-YEAR PLAN FOR PORT EXPANSION (1,000 TONS)

PORT	1987/88		1991/92	
	AMOUNT OF CARGO	%	AMOUNT OF CARGO	%
ALEXANDRIA	19,600	63.0	14,800	38.7
EL-DEKIRA	400	1.3	6,200	16.3
DAMIETTA	1,500	4.8	4,600	12.0
PORT SAID	4,700	15.1	4,700	12.3
SUEZ/EL ADABIA	2,700	8.7	4,500	11.8
SAFAGA	2,200	7.1	3,400	8.9
TOTAL	31,100	100.0	38,200	100.0

At the same time, an increase in tonnage is also planned. Table 5, 2.1 shows the program for expansion of ocean-going vessels.

2.1 TABLE 5

PLAN FOR INCREASE IN EGYPTIAN VESSELS

	1982		1987		1992		1997	
	NO.	TOTAL DWT	NO.	TOTAL DWT	NO.	TOTAL DWT	NO.	TOTAL DWT
NATIONAL ENTERPRISES	37	308,114	41	399,182	50	453,882	65	550,000
OTHERS	50	278,310	93	937,743	99	970,997	120	1,100,000
TOTAL	87	586,424	134	1,336,925	149	1,424,879	185	1,650,000

SOURCE AMTA

## 2.2 Maritime Affairs in Middle East and Africa

### 2.2.1 Maritime Affairs in Egypt

#### (1) Administrative Organization of Maritime Affairs

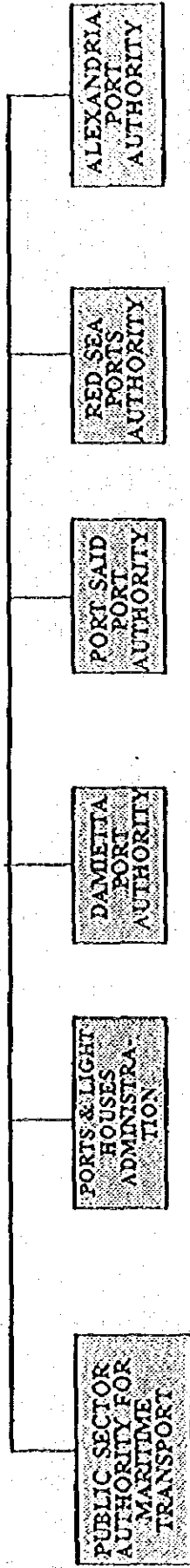
Administration of marine affairs in Egypt is governed by the Ministry of Maritime Transport, which is under the Ministry of Transportation and Communication.

As shown in Table 1, 2.2, the Ministry of Maritime Transport consists of six authorities. Among these six authorities, Public Sector Authority for Marine Transport supervises national enterprises engaged in marine transport and allied industries (shipping companies, shipping agents, stevedoring, warehouses, container handling, shipbuilding, shiprepairing companies, etc.) and Ports and lighthouses Administration controls crew's registration, maritime officer's licenses, lighthouses and ports. Labour administration relating to crew, however, is not handled by the Ministry of Maritime Transport, but the Ministry of Labour,

2.2 TABLE 1

THE ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF MARITIME TRANSPORT

MINISTRY OF MARITIME TRANSPORT



1. The Egyptian Navigation Co.
2. The Egyptian Co. for Maritime Transport (MARTTRANS)
3. Alexandria Shipping Agencies Co.
4. Canal Shipping Agencies Co.
5. The United Arab Stevedoring Co.
6. The Canal Stevedoring Co.
7. The Egyptian Warehouses Co.
8. Alexandria Container Handling Co.
9. Port Said Container Handling Co.
10. Damietta Container Handling Co.
11. The Egyptian Co. for Marine Works and Provisions
12. Suez Stevedoring Co.
13. The Egyptian Repair and Shipbuilding Co.

to which all labour administration in Egypt is centralized.

Other four are the port authorities which control Damietta, Port Said, Red Sea and Alexandria ports respectively.

In the Ministry of Maritime Transport there is no section which administrates education of seafarers. This is because there is no such organization of educating seafarers directly managed by the Government of Egypt, and AMTA, the only organization of educating seafarers in Egypt, has been professing its position as an international organization even after "Arab boycott".

Since "Arab boycott", however, AMTA greatly depends on assistance from the Government of Egypt in terms of financial aspect and Ministry of Transport & Communications is assigned to the chairman of the Board of Director of AMTA. Therefore, the relations between the Government of Egypt and AMTA are essentially close. (Refer to Table 2, 2.2)

## (2) Enterprises of Maritime Transport and Their Tonnage

As explained in 2.1 (1), Egypt is rapidly increasing its own tonnage and, under the 2nd Five-year Plan, aims at transporting 40% of its total maritime cargo by Egyptian vessels. And, according to the tonnage expansion plan, the share in the first decade of the 21st century is intended to be raised to 75% or more.

As shown in Table 3, 2.2, in 1988 the majority of vessels in Egypt, i.e. 63% in terms of the number of vessels and 71% in terms of GT, were owned by national enterprises, and the average age of vessels owned by national enterprises was far younger than that of the private ones. Among the national enterprises, Egyptian Navigation Co. has the biggest share of 27.5% in GT.





2.2 TABLE 3

NUMBER AND GT OF VESSELS OF EGYPTIAN REGISTRY (1,000 GT OR OVER)

YEAR	NATIONAL ENTERPRISE			PRIVATE ENTERPRISE			TOTAL			RATIO AGAINST 1985	
	NO.	GT	AVERAGE AGE OF VESSELS	NO.	GT	AVERAGE AGE OF VESSELS	NO.	GT	AVERAGE AGE OF VESSELS	NO.	GT
1985	78	457,332	9.7	36	151,284	23.0	114	608,616	13.0	1.00	1.00
1986	89	647,127	8.1	45	212,204	21.0	134	859,331	11.3	1.17	1.41
1987	89	665,469	8.7	48	218,218	21.8	137	883,687	11.9	1.20	1.45
1988	89	662,792	9.6	53	276,737	22.7	142	939,529	13.5	1.24	1.54

GT : GROSS TONNAGE

SOURCE ARAB SHIPPING GUIDE

(The number of ships in this table shows the actual records, while that in Table 5, 2.1, shows the planned number, which results in some difference between them. As to the difference in tonnage, the former is calculated in GT and the latter in DWT.)

Table 4, 2.2 shows the recent transition in number of Egyptian seafarers. As clearly shown in the table, the number of Egyptian seafarers keeps increasing as a result of an increase in the number of Egyptian vessels. It can be easily understood that there is a great demand for supplying seafarers, namely training and education of seafarers, so as to achieve the development of marine transportation in accordance with the national plan.

2.2 TABLE 4

TRANSITION IN NUMBER OF EGYPTIAN SEAFARERS

YEAR	NUMBER OF VESSELS	NUMBER OF SEAFARERS	RATIO OF NUMBER OF SEAFARERS AGAINST 1985
1985	114	3,514	1.00
1986	134	4,124	1.17
1987	137	4,218	1.20
1988	142	4,332	1.23

SOURCE ARAB SHIPPING GUIDE

### (3) Maritime Education Institutes

AMTA, located in Alexandria, Egypt, is the only comprehensive maritime education institute in Egypt.

AMTA was established by a resolution of the Arab League in 1972, in order to educate and train seafarers for the purpose of attaining independence and expansion of the Arab shipping industries, and it has given its students such education and training as will be necessary for qualified seafarers of ocean-going vessels and other education in wide fields related to maritime affairs, including management of shipping industries, administration of ports and harbours and computer aided engineering.

After its establishment AMTA suffered from unstable diplomatic relations between Egypt and the Arab League at one time, and there occurred inevitable changes in financial foundation, nationality distribution of trainers and cadets, campus construction plan, etc. However, overcoming various difficulties, AMTA has steadily developed and expanded and nearly 30,000 students in total have already finished the various courses of AMTA.

17 years have passed since its establishment and AMTA has now secured its position as one of the best maritime education institutes in the Middle East and Africa. (Details will be explained in 2.3)

#### 2.2.2 Maritime Affairs in Other Countries in Middle East and Africa

##### (1) Maritime Affairs in Each Country

Transition in the number of vessels, GT and number of seafarers in the Arab bloc countries for the period of 1985 - 88 is listed in Table 5, 6 and 7, 2.2.

2.2 TABLE 5

## TRANSITION OF TONNAGE AND SEAFARERS IN ARAB BLOC (1985-88)

COUNTRY	NUMBER OF VESSELS				G. T.				VESSELS OF 1,000GT OR OVER			
	1985	1986	1987	1988	1985	1986	1987	1988	1985	1986	1987	1988
SAUDI ARABIA	173	144	127	109	3,029,638	2,859,053	2,587,984	2,374,986	5,683	4,650	4,040	3,337
KUWAIT	72	70	58	40	2,252,679	2,570,672	2,001,445	865,722	3,216	3,086	2,619	2,078
ALGERIA	74	71	73	75	1,328,962	860,748	865,088	858,034	2,603	2,404	2,443	2,439
IRAQ	44	39	42	41	925,514	870,280	894,342	841,937	1,666	1,445	1,573	1,531
LIBYA	28	28	27	29	832,423	673,430	668,470	634,765	1,028	1,008	980	1,040
U. A. EMIRATES	48	42	41	42	725,417	517,492	571,208	709,320	1,328	1,087	1,094	1,033
LEBANON	103	89	87	72	413,178	353,161	383,827	324,220	2,201	1,980	1,897	1,806
MOROCCO	50	49	48	48	370,769	319,338	312,818	329,006	1,345	1,390	1,413	1,417
QATAR	19	17	14	14	340,174	329,293	293,824	292,772	834	775	625	465
TUNISIA	23	23	23	21	167,450	167,450	167,450	160,972	786	781	781	727
SUDAN	11	11	11	11	93,092	93,092	92,700	92,700	381	346	353	353
JORDAN	6	4	3	3	47,687	38,173	28,692	28,692	163	184	150	150
SYRIA	12	9	11	11	39,394	31,244	35,453	35,881	256	196	244	238
BAHRAIN	3	3	2	1	21,619	21,619	19,625	16,627	82	72	54	30
SOMALIA	4	3	4	3	12,584	7,817	9,995	4,825	84	59	79	54
S. YEMEN	2	2	2	2	3,236	3,236	3,236	3,236	32	32	30	30
MAURITANIA	1				1,581				18			
DJIBOUTI												
OMAN												
Y. YEMEN							3,912					28
TOTAL	673	604	574	522	10,605,347	9,716,098	8,890,069	7,623,695	21,726	19,395	18,403	16,725

REFERENCE DATA OF EGYPT

(SOURCE SEA TRADE ARAB SHIPPING GUIDE)

EGYPT	114	134	137	142	608,616	859,331	883,687	939,529	3,514	4,124	4,218	4,392
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REFERENCE DATA OF THE WORLD

(SOURCE SEA TRADE ARAB SHIPPING GUIDE)

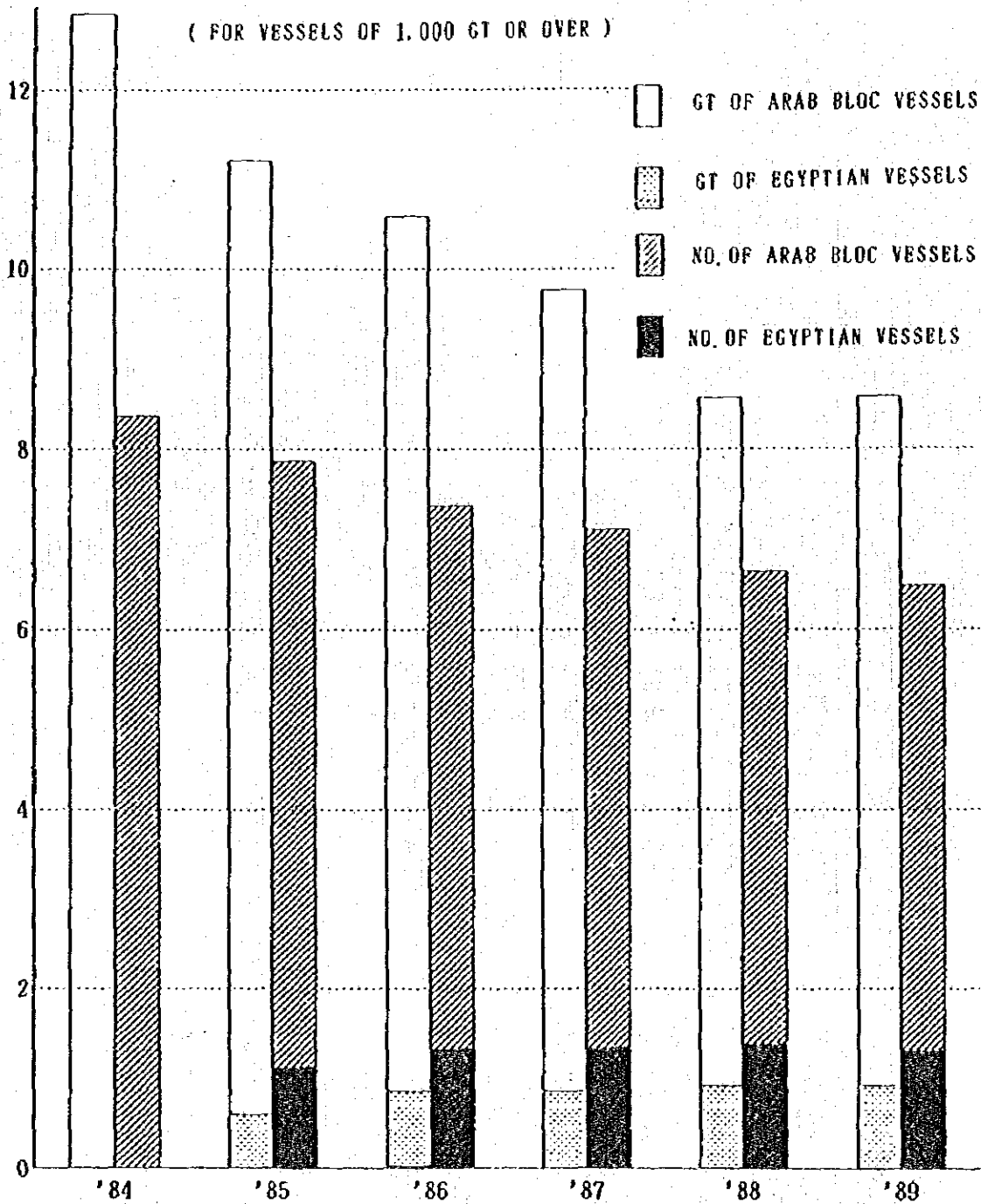
WORLD TOTAL	30,025	29,426	29,120	28,920	400,881	389,670	388,178	387,906				
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(SOURCE LLOYDS LIST)

MILLION GT 2.2 TABLE 6

100 VESSELS TRANSITION OF VESSELS IN ARAB BLOC

( FOR VESSELS OF 1,000 GT OR OVER )



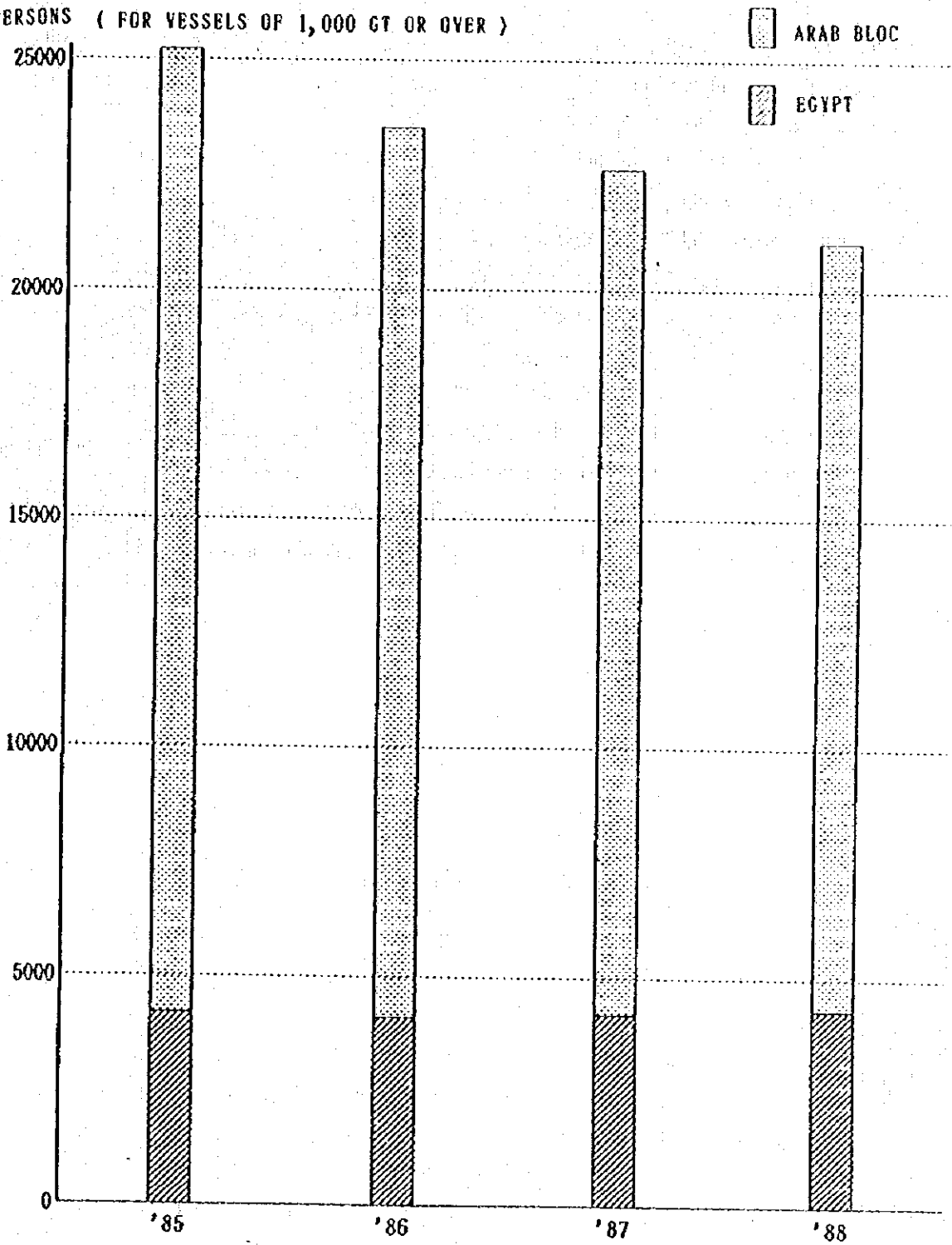
ARAB BLOC	'84	'85	'86	'87	'88	'89
MILLION GT	12.86	11.21	10.58	9.77	8.56	8.57
NO. OF VESSELS	837	787	738	711	664	648

EGYPT	'84	'85	'86	'87	'88	'89
1,000 GT	—	60 0	85 9	88 4	94 0	95 3
NO. OF VESSELS	—	114	134	137	142	135

2.2 TABLE 7

NUMBER OF SEAFARERS IN ARAB BLOC

PERSONS ( FOR VESSELS OF 1,000 GT OR OVER )



	'85	'86	'87	'88
ARAB BLOC	25,240	25,240	25,240	25,240
EGYPT	4,202	4,124	4,218	4,332

SOURCE ARAB SHIPPING GUIDE

Vessels of 1,000 GT or over are covered by these statistics, which means most of the ocean-going vessels are included therein.

Since the leading maritime countries in the Arab block export crude oil, natural gas, petroleum gas and petroleum products, both their vessels and seafarers have been decreasing in recent years due to the world-wide decrease in demand for these goods.

The tonnage of the world showed the same tendency, owing to the sluggish world economy. However, it is worth noticing that the tonnage and number of seafarers steadily increased in Egypt even during the depressed period, while they were also promoting export of petroleum and petroleum products as other petroleum producing countries did. (Table 5, 6, 7 and 8, 2.2)

2.2 TABLE 8

TRANSITION INDEX (AGAINST 1.00 FOR 1985)

COUNTRY	NUMBER OF VESSELS				G. T.				NUMBER OF SEAFARERS			
	1985	1986	1987	1988	1985	1986	1987	1988	1985	1986	1987	1988
EGYPT	1.00	1.18	1.20	1.25	1.00	1.41	1.45	1.54	1.00	1.17	1.20	1.23
ARAB BLOC	1.00	0.90	0.85	0.78	1.00	0.92	0.84	0.72	1.00	0.89	0.85	0.77
WORLD	1.00	0.98	0.97	0.96	1.00	0.97	0.97	0.97				

SOURCE LLOYDS LIST  
ARAB SHIPPING GUIDE

The volume of marine transportation is showing a tendency of recovery by the recovery of the world economy, and the number of vessels in service in the world is gradually increasing. Therefore, the same increase will be expected also in the Arab bloc.

Compared with the total tonnage in the world, the tonnage in the other African areas remains very small, but a similar increase in tonnage is expected also in this area influenced by the world economy.

(2) Maritime Education Institutes

As to maritime education institutes, the following 3 institutes, besides AMTA, are in the Middle East, namely:

<u>Name of Country</u>	<u>Name of Institute</u>	<u>Location</u>
1 IRAQ	Arab Gulf Academy for Maritime Studies	Baghdad
2 UNITED ARAB EMIRATES	Arab Maritime Transport Academy *	Sharjah
3 LEBANON	Institute for Higher Maritime Studies	Beirut

and in Africa the following 12 institutes are members of the Conference of Maritime Education Institutes in Africa.

<u>Name of Country</u>	<u>Name of Institute</u>	<u>Location</u>
1 ALGERIA	Institut Supérieur Maritime	Bou-Ismaïl
2 COTE D'IVOIRE	Académie Régionale des Sciences et Techniques de la Mer	Abidjan
3 GHANA	Regional Maritime Academy	Accra
4 KENYA	Bandari College	Mombassa
5 LIBERIA	Marine Training Institute	Monrovia

6	MADAGASCAR	Ecole Nationale d'Enseignement Maritime	Mahajunga
7	MOROCCO	Institut Superieur d'Etudes Maritime	Casablanca
8	MOZAMBIQUE	Escola Nautica de Mozambique	Maputo
9	NIGERIA	Nigerian Nautical College	Oron
10	SENEGAL	Ecole Nationale de Formation Maritime	Dakar
11	TANZANIA	Dar-El-Salaam Maritime Training Unit	Dar-El-Salaam
12	TUNISIA	Ecole de la Marine Marchande	Sousse

Among the above institutes, Institut Superieur Maritime in Algeria and Academie Regionale des Sciences et Techniques de la Mer in Cote d'Ivoire are accepting students from French speaking zone in Africa and, being internationally very famous, each has educated and trained 50 to 60 officers for ocean-going vessels every year. However, even these two institutes are in a very difficult situation; necessary facilities and material are in short supply and competent teaching staff members are not available. Other institutes are out of question in every points.

As to the practical training on actual vessels, which is one of the important training items, an institute in Iraq owns one training vessel and this is the only one institute, excepting AMTA, among all maritime education institutes in the Middle East and Africa, that possesses its own training



vessel. Under such circumstances, students in this region (who desire to become ship's officers) have a strong demand for a chance of receiving systematical on-board training.

In this region, only AMTA's educational program, under which students can systematically receive practical training aboard training vessel, AIDA III, and Egyptian merchant ships, satisfies the international standard of education.

\*AMTA in Sharjah, United Arab Emirates, was established by the Arab League after so called "Arab boycott" in 1979, as a substitutive maritime education institute for AMTA in Alexandria. Now that Egypt restored to a member of the Arab League, AMTA in Alexandria has secured the position as the principal institute in November 1989, instead of AMTA in Sharjah, which is very poor in facilities, equipment and teaching staff.

### 2.2.3 Demand for Seafarers in Egypt and Other Arab and African Countries

#### (1) The importance of training qualified seafarers

As mentioned before, Egypt is promoting the shipping industry as a national project, and other Arab and African countries are eager to expand their national fleet for the development of their economies. Under the circumstances, each of those countries has potential demand for a substantial number of qualified seafarers for ocean-going vessels and shore-based maritime businesses.

As mentioned in 2.2.2, there are as many as 16 training institutions in the Middle East and Africa for the training of personnel to meet such a demand in the maritime industry. Meanwhile, the STCW Convention provides standards of training, certification and watchkeeping for seafarers,

aiming to promote safety of life and property at sea, and the protection of the marine environment.

We have no detailed data relevant to historical records, scales, levels of the training and facilities available in these training institutions except a few of representative ones. Obviously, AMTA is the most distinguished institution in every respect among them. It is proved by the fact that 14 countries out of 16 where exist the above-mentioned training institutions are sending their personnel to AMTA for training.

Since its establishment in 1972, AMTA has accepted students from 46 countries (13 Middle East, 27 African, 2 Asian and 4 European countries) and produced 2,307 academy graduates.

According to data obtained from the alumni association of AMTA, 1,239 graduates (54% of total graduates) are found to be employed in as many as 77 entities (shipping companies, maritime administration, port authorities and educational institutions) distributed among 21 countries mostly in the Middle East and North Africa. Classification of students of AMTA, enrolled, graduated and employed after graduation for the period between 1972 and 1989 by nationality is shown on the attached table of Appendix 3.

It is obvious from such data that AMTA is contributing as the major supply source of capable personnel for the maritime industry in the Middle East and African region. In fact, the maritime industry in this region is in the developing stage and still depends on some key personnel from both European and American countries. Under the circumstances, it is natural that they focus on bringing up more personnel both in quality and quantity in order to achieve the goal of manning their vessels by native seafarers as soon as possible.

(2) Estimate of Future Demand for Training:

Although AMTA is intending to respond to demand for training in the Middle East and African region, an estimation of future demand of training for such specific industrial sector as AMTA involves a lot of complicated factors, just like economic forecasting.

For example, it is to be made by a synergetic estimation based on such variable and uncertain factors as tonnage requirements derived from growth rates of regional economies, movements of three major bulk cargoes (iron ore, coal and grain) and trends of the tanker market, and conditions for manning of seafarers (working condition, employment, ratio of reserved seafarers, attrition of the work-force and technical innovation).

For reference, we explain the process which we used in our estimation of demand for the training at AMTA based on attached tables 9 through 11 in 2.2, which we have prepared for review based on various hypotheses.

This review covers estimated demands for personnel to be trained at AMTA in nautical and marine engineering studies.

The countries reviewed here are limited to Arab and African countries which have sent their personnel to AMTA for training since its establishment.

2.2 Table 9 (Demand for AMTA Graduates of Nautical and Marine Engineering Studies (1))

1) Number of vessels indicates that of ocean going vessels of 1,000 GT or more owned by those countries (Column C).

Although numbers of vessels for the Arab region have been derived from the Arab Shipping Guide, those for the

African region have been assumed by using share ratio of applicable vessels in total number of vessels of 100 GT or above in the Arabian region (according to the Lloyd's List ... Column A) since no data have been available. (See black base column.)

- 2) Actual numbers of ships' officers onboard have been assumed on the basis of 8 persons (4 deck officers and 4 engineer officers) per vessel (Column E).
- 3) While most graduates from AMTA are serving on vessels, a certain number are working in maritime administration, port authorities, educational institutions, shore-based shipping business, and other related maritime sectors. According to the record of AMTA graduates, the total number of those working ashore has been estimated to be 20% of the total number of those who are serving aboard (See appendix 3). Consequently, maritime technological personnel actually working aboard and ashore will be 120% of those who are serving aboard (Column F).
- 4) In order to maintain the above level of actual working force, it is necessary to keep a certain number of people in reserve to supplement those who are leaving or absent due to illness. Based on the most conservative estimate of 25% as the required ratio for the reserved force, the aggregate number of working force actually required would be 125% of the number of actual working force (Column G).
- 5) The aggregate number of working force estimated in 4) decreases year by year due to retirements, resignations, death, etc. Although the rate of this attrition varies according to the national character, social environment, working practice and conditions, etc., it is assumed here at 10%. This means that AMTA is required to send out graduates annually to the maritime industries in numbers equivalent to 10% of the aggregate number of

working force to fill the vacancies (Column H).

On the other hand, in addition to these maritime training institutions, including AMTA, located in Middle East and Africa as described in the above item 2.2.2 (2), training of the required personnel also relies on the same kind of institutions in other parts of the world. In is necessary, therefore, to find out to what extent these Arab and African countries are relying on AMTA with regard to training of their required maritime personnel. For this purpose, it is required to classify graduates of AMTA by nationality.

2.2 Table 10 (Demand for AMTA Graduates of Nautical and Marine Engineering Studies (2))

- 6) The number of students enrolled in AMTA during the period 1972 through 1986 from each country (Column I) and the share of each country (Column J) are shown on this table.
- 7) Out of the total graduates number of 2,307 as shown on the attached table, 1,239 graduates are listed in the record by their working entities and by nationalities (Column K).
- 8) The number of persons unidentified on the list is 1,068 (2,307 minus 1,239), which has been allocated, by the enrollment ratio of nationality in AMTA (Column J), to each country (Column L).

The number of graduates for each country has been assumed by adding this allocated number to the identified number (Column K) to make up the total number of graduates classified by nationality to 2,307 persons (Column M).

For the purpose of calculating the extent of their dependency on AMTA, it has been assumed that: Egypt relies 100%

on AMTA (when AMTA was established, Egypt was relying on foreign crew for manning national fleet and on maritime institution in developed countries, however, presumably Egypt has nearly achieved this level of 100% already). Demand for AMTA graduates has been calculated on this assumption.

2.2 Table 11 (Demand for AMTA Graduates of Nautical and Marine Engineering Studies (3))

- 9) The number of supplementary personnel required (Column O) for Egypt is 161, as estimated above, while the number of Egyptian graduates from AMTA is 1,572 (Column N).

Dependency on AMTA has been calculated using the following formula on the assumption that dependency of Egypt is 100%.

$$(\text{Column N}) \div (\text{Column O}) \times (161 \div 1,572) \times 100 = (\text{Column P})$$

This is the formula to calculate the ratio of required number of supplementary maritime personnel to compared to total number of graduates in the past for each country in proportion to be 100% in case of Egypt (Column P).

- 10) Demands of each country for AMTA granduates is calculated by multiplying the required number of supplemental personnel of each country by the dependency ratio of each country on AMTA (Column Q).

Finally, current scale of demand for AMTA granduates has been estimated as 233 persons in total by the above calculations. This figure accounts for 23% of the total requirements i.e., 1,028 persons by the countries (excepting Liberia) covered here, which means that Middle East and African region countries rely on AMTA for the training of 23% of the maritime personnel required by them.

As mentioned above, Egypt is planning to continue expansion of its fleet in future, and other Middle East and African countries also are presumed to expand their tonnages. Under the circumstances, the scale of training would continue to expand in the future.

Since past records indicate that on average 38% of the students have been leaving before completing the required term, it would be necessary to increase the number of students enter into AMTA to as many as 320 persons annually to cover the leaving students.

2.2 TABLE 9  
DEMAND FOR AMTA GRADUATES OF NAUTICAL AND MARINE ENGINEERING STUDIES (1)

COUNTRY	100GT OR ABOVE		1000GT OR ABOVE		NUMBER OF OFFICERS ONBOARD E C×8	ADJUSTMENT INCLUDE ASHORE STAFF F E×1.2	ADJUSTMENT INCLUDE RESERVED FORCE G F×1.25	REQUIRED NUMBER OF SUPPLEMENT H G×0.1
	NO.	L.000GT	NO.	L.000GT				
	A	B	C	D				
EGYPT	422	1,063	134	859	1,072	1,286	1,608	161
SUDAN	23	96	11	93	88	106	132	13
PALESTINE			0		0	0	0	0
IRAQ	149	1,016	39	870	312	374	468	47
JORDAN	5	42	4	38	32	38	48	5
SYRIA	57	63	9	31	72	86	108	11
LIBYA	104	825	28	673	224	269	336	34
KUWAIT	239	2,581	70	2,571	560	672	840	84
SAUDI ARABIA	380	2,978	144	2,859	1,152	1,382	1,728	173
SOMALIA	26	16	3	8	24	29	36	4
BAHRAIN	98	52	3	22	24	29	36	4
S. YEMEN	29	13	2	3	16	19	24	2
LEBANON	228	485	89	353	712	854	1,068	107
QATAR	55	307	17	329	136	163	204	20
ALGERIA	145	882	71	861	568	682	852	85
N. YEMEN	11	7	2		13	16	19	2
OMAN	29	15	4		34	41	51	5
U. A. EMIRATES	220	654	42	517	336	403	504	50
TUNISIA	71	286	23	167	184	221	276	28
MOROCCO	294	416	49	319	392	470	588	59
DJIBOUTI	7	3	1		8	10	12	1
NIGERIA	206	564	30		243	291	364	36
ETHIOPIA	23	67	3		27	33	41	4
GHANA	137	166	20		161	194	242	24
TANZANIA	41	51	6		48	58	72	7
SIERRA LEONE	29	7	4		34	41	51	5
COMORO IS	3	1	0		4	4	5	1
NAMIBIA			0		0	0	0	0
IVORY COAST	58	121	9		68	82	103	10
MADAGASCAR	71	74	10		84	100	125	13
GAMBIA	6	3	1		7	8	11	1
CAMEROON	49	77	7		58	69	87	9
KENYA	29	9	4		34	41	51	5
GUINEA	19	7	3		22	27	34	3
ZAIRE	31	66	6		37	44	55	5
GABON	23	100	3		27	33	41	4
ERITREA			0		0	0	0	0
TOGO	11	55	2		13	16	19	2
CAPE VERDE	25	14	4		29	35	44	4
LIBERIA	1,658	52,649	244		1,953	2,344	2,930	293
TOTAL	5,011	65,831	1,101	10,573	8,809	10,571	13,214	1,321
TOTAL EXCLUDE LIBERIA	3,353	13,182	857	10,573	6,856	8,227	10,284	1,028





2.2 TABLE 10  
DEMAND FOR AMTA GRADUATES OF  
NAUTICAL AND MARINE ENGINEERING STUDIES (2)

(PERSONS)

COUNTRY	TOTAL ENROLLMENT IN AMTA	SHARE RATIO OF I	NUMBER OF GRADUATES IDENTIFIED	ALLOCATED UNIDENTIFIED GRADUATES	TOTAL NUMBER OF GRADUATES
	I	J %	K	L	M
EGYPT	21,452	73.7	785	787	1,572
SEUDAN	1,567	5.4	68	58	126
PALESTINE	787	2.7	0	29	29
IRAQ	788	2.7	43	29	72
JORDAN	699	2.4	64	26	90
SYRIA	596	2.0	8	22	30
LIBYA	525	1.8	6	19	25
KUWAIT	356	1.2	109	13	122
SAUDI ARABIA	345	1.2	44	13	57
SOMALIA	216	0.7	8	8	16
BAHRAIN	213	0.7	12	8	20
S. YEMEN	212	0.7	0	8	8
LEBANON	103	0.4	0	4	4
QATAR	80	0.3	6	3	9
ALGERIA	57	0.2	5	2	7
N. YEMEN	47	0.2	0	2	2
OMAN	40	0.1	0	1	1
U. A. EMIRATES	26	0.1	8	1	9
TUNISIA	17	0.1	2	1	3
MOROCCO	5	0.0	0	0	0
DJIBOUTI	1	0.0	0	0	0
NIGERIA	271	0.9	50	10	60
ETHIOPIA	154	0.5	0	6	6
GHANA	123	0.4	6	4	10
TANZANIA	100	0.3	10	4	14
SIERRA LEONE	48	0.2	0	2	2
COMORO IS	32	0.1	4	1	5
NAMIBI	30	0.1	0	1	1
IVORY COAST	15	0.1	0	1	1
MADAGASCAR	14	0.0	0	1	1
GAMBIA	8	0.0	1	0	1
CAMEROON	7	0.0	0	0	0
KENYA	5	0.0	0	0	0
GUINEA	5	0.0	0	0	0
ZAIRE	2	0.0	0	0	0
GABON	2	0.0	0	0	0
ERITREA	1	0.0	0	0	0
TOGO	1	0.0	0	0	0
CAPE VERDE	1	0.0	0	0	0
LIBERIA	144	0.5	0	4	4
TOTAL	29,095	100.0	1,239	1,066	2,307
TOTAL EXCLUDE LIBERIA	28,951	99.5	1,239	1,062	2,303

2.2 TABLE 11  
DEMAND FOR AMTA GRADUATES OF  
NAUTICAL AND MARINE ENGINEERING STUDIES (3)

COUNTRY	TOTAL	REQUIRED	DEPENDENCY	SCALE OF
	NUMBER OF	NUMBER OF	ON	DEMAND
	GRADUATES	SUPPLEMENT	AMTA	ON AMTA
	N	O	P	Q
	SAME AS M	SAME AS H	%	
EGYPT	1,572	161	100.0	161
SUDAN	126	13	99.3	13
PALESTINE	29	0	0.0	0
IRAQ	72	47	15.7	7
JORDAN	90	5	184.4	9
SYRIA	30	11	27.9	3
LIBYA	25	34	7.5	3
KUWAIT	122	84	14.9	12
SAUDI ARABIA	57	173	3.4	6
SOMALIA	16	4	41.0	2
BAHRAIN	20	4	51.2	2
S. YEMEN	8	2	41.0	1
LEBANON	4	107	0.4	0
QATAR	9	20	4.6	1
ALGERIA	7	85	0.8	1
N. YEMEN	2	2	10.2	0
OMAN	1	5	2.0	0
U. A. EMIRATES	9	50	1.8	1
TUNISIA	3	28	1.1	0
MOROCCO	0	59	0.0	0
DJIBOUTI	0	1	0.0	0
NIGERIA	60	36	17.1	6
ETHIOPIA	6	4	15.4	1
GHANA	10	24	4.3	1
TANZANIA	14	7	20.5	1
SIERRA LEONE	2	5	4.1	0
COMORO IS	5	1	51.2	1
NAMIBIA	1	0	0.0	0
IVORY COAST	1	10	1.0	0
MADAGASCAR	1	13	0.8	0
GAMBIA	1	1	10.2	0
CAMEROON	0	9	0.0	0
KENYA	0	5	0.0	0
GUINEA	0	3	0.0	0
ZAIRE	0	5	0.0	0
GABON	0	4	0.0	0
ERITREA	0	0	0.0	0
TOGO	0	2	0.0	0
CAPE VERDE	0	4	0.0	0
LIBERIA	4	293	0.1	0
TOTAL	2,307	1,321		233
TOTAL EXCLUDE LIBERIA	2,303	1,028		233

## 2.2.4 Maritime Officer's Licenses Qualification System in Egypt and Other Arab Countries

In 1976 a unified law covering Arab countries concerning maritime officer's licenses was prepared by the representatives of Arab countries and member countries promised to follow all procedures necessary to promulgate this law.

The kind of maritime officer's licenses, the limitation on ship's officers duties and requirement to be manned on board ships as ships officer under this unified law are shown in Tables 12 and 13, 2.2.

2.2 TABLE 12

NUMBER AND TYPE OF CERTIFICATES REQUIRED ON VESSELS

### MASTER AND MATES CERTIFICATES

AREA	GROSS TONNAGE OF VESSEL	Master	1st Mate	2nd Mate	Mate 3rd
High Seas "Unlimited"	1600 tons or over	1	1	1	1
	Under 1600 tons	1	1	1	-
Short International	5000 tons or over	1	1	1	1
	1600 tons but under 5000 tons	1	1	1	-
	800 tons but under 1600 tons	-	1	1	-
	Under 800 tons	-	1	1	-
Coastal	25,000 tons and over	1	1	1	1
	5,000 tons but under 25,000 tons	-	1	1	1
	1,600 tons but under 5,000 tons	-	1	1	-
	200 tons but under 1,600 tons	-	-	1	1

2.2 TABLE 13

## NUMBER AND TYPE OF CERTIFICATES REQUIRED ON VESSELS

## ENGINEERS CERTIFICATES

AREA	PROPULSIVE POWER (KWTS)	Chief Eng.	1st Eng.	2nd Eng.	3rd Eng.
High Seas "Unlimited"	Above 3000 kw	1	1	1	-
	1000 to 3000 kw	1	1	-	1
	Below 1000 kw	-	1	1	1
Short International	Above 3000 kw	1	1	1	-
	1000 kw - 3000 kw	-	1	1	1
	Below 1000 kw	-	1	1	-
Coastal	Above 6000 kw	1	1	1	-
	3000 - 6000 kw	-	1	1	-
	750 - 3000 kw	-	-	1	1
	350 - 750 kw	-	-	-	1

The unified law applies to the navigation officers on ships which are bigger than 200 GT and the engineers on ships which are equipped with main engines of 350 kW (about 476 hp) or more output.

Maritime officers licenses on ships which are below the above application are subject to the respective municipal laws in their nations and in case of Egypt, competency for captains and chief engineers aboard tug boats is stipulated separately.

The requirements for taking the examination for licenses (age, physical aptitude, level of knowledge and skills, and actual experience at sea) shall be stipulated by its own municipal law the contents of which is in conformity to STCW Convention.

## 2.3 Outline of Arab Maritime Transport Academy

### 2.3.1 History

#### 1) Details and Purposes of Establishing AMTA

The Arab petroleum producing countries had been earnestly desiring to transport petroleum produced in their countries by their own oil tankers and to foster the independent shipping business by increasing their merchant fleets. This desire began to be realized by starting training for human resources in the early 1970s.

That is, the Arab League resolved at the 53rd Permanent Committee for Transportation and Communications in March 1970 to establish the Arab Maritime Transport Academy in Alexandria, Egypt, for the training of personnel to work in the field of marine transportation.

This scheme was started by the interested countries (at first five countries and thereafter gradually increasing to 16 countries) among the member countries of the Arab League, and aimed to proceed with the activities of this scheme in the five years from 1972 to 1977, by obtaining approval of assistance from the United Nations Development Programme, as well as deciding contributions of the cooperative countries. At the same time, the educational activities began in 1972 at temporary premises scattered throughout the city of Alexandria.

#### 2) History

In 1975 AMTA secured a site of 580,000 m<sup>2</sup> at Abu Qir district, 22 km east of the city, and started constructing permanent educational facilities. In the same year a reorganization of the educational system was carried out, whereby a three-

faculty system consisting of nautical studies, marine engineering studies and maritime transport studies was introduced, and a seamen's training centre was established as an annex to AMTA.

In 1979, the peace treaty was signed between Egypt and Israel, and the alliance between Egypt and the Arab League was cut off as a result. At that time AMTA could substitute a site of 16 Km<sup>2</sup> at Montada district in Abu Qir for the cancelled site, which was later converted into a campus of the Egyptian Air Force Academy.

With the Arab countries boycott, students and teaching staff of non-Egyptian nationalities left Egypt, and AMTA fell into financial trouble, as the contributions from the Arabian countries other than Sudan were suspended. However, various efforts were continued to overcome such difficulties by taking necessary measures, such as obtaining financial assistance of 1,500,000 dollars per annum from the Egyptian Government since 1980 fiscal year, increasing tuition fees and curtailing expenses, etc.

### 3) Number of Students Enrolled, Classified by Nationality

The number of students enrolled, classified by nationality, is shown in table 1, 2.3, which is one of the good data to show how the educational activities of AMTA have developed since it was established.

The number of students enrolled increased gradually from 733 in 1972/73, when AMTA was established, to the level of 2,200 in 1978/79. Although reduced to the level of 2,000 in 1980 under the influence of "Arab boycott", the number of students showed an increasing tendency after 2 years and exceeded the level of 3,100 in 1985/86. Keeping an annual average enrollment of a little less than 2,400 with a minimum of the level of 2,000, AMTA has been training on the largest scale

2.3 TABLE 1

NUMBER OF AMTA STUDENTS ENROLLED FROM EACH COUNTRY (FROM 1972 TO 1987)

NAME OF COUNTRY	72/79	79/80	80/81	81/82	82/83	83/84	84/85	85/86	86/87	TOTAL
JORDAN	321	56	20	8	9	11	26	79	169	699
U. A. EMIRATES	23	3								26
BAHRAIN	174	25	9	1		2		1	1	213
ALGERIA	51	1				1	1	2	1	57
SAUDI ARABIA	255	20	22	6	4	5	10	10	13	345
SUDAN	311	96	140	320	108	127	171	183	111	1,567
SYRIA	316	52	57	49	44	25	18	25	10	596
IRAQ	728	31	7	3	3	3		7	6	788
EGYPT	6,358	1,534	1,652	1,595	1,832	2,125	2,224	2,474	1,658	21,452
KUWAIT	290	41	7	2		12		2	2	356
OMAN	34	2	1			1	1		1	40
QATAR	61	6	5	1	2	2	1	2		80
LEBANON	41	6	9	11	6	4	13	11	2	103
LIBIA	483	18	2	2	1	2	1	8	8	525
N. YEMEN	19	7	8	3		3	2	2	3	47
S. YEMEN	206	6								212
PALESTINE	333	43	23	23	35	45	69	141	75	787
TUNISIA	14								3	17
MOROCCO		1							4	5
SOMALIA	40	27	26	44	24	24	17	10	4	216
GHANA		3	8	15	18	20	11	25	23	123
NIGERIA	9	14	21	40	6	6	62	50	63	271
COMORO IS			4	4	3	8	4	8	1	32
GAMBIA			1	1		1	1	2	2	8
SIERRA LEONE				3	6	6	8	13	12	48
IVORY COAST			6	6					3	15
TANZANIA			10	12	7	12	9	22	28	100
ETHIOPIA		1	12	20	19	30	19	37	16	154
LIBERIA	4	9	14	14	17	25	22	25	14	144
ERITREA		1								1
PAKISTAN	3	1		2		2		2	1	11
KENYA	1								4	5
TURKEY		1	1	1	1	1	1	1		7
NAMIBIA					2	2	2	22	2	30
CAMEROON						1	1	2	3	7
MADAGASCAR							2	6	6	14
ITALY								2	1	3
ZAIRE								1	1	2
GUINEA									5	5
TOGO									1	1
DJIBOUTI									1	1
CAPE VERDE									1	1
GABON									2	2
NORWAY									1	1
U. K.									1	1
SWEDEN									1	1
TOTAL	10,075	2,005	2,065	2,186	2,147	2,506	2,696	3,175	2,264	29,119

SOURCE: AMTA



among existing maritime education institutes in the world.

List of enrolled students classified by nationality shows that they came from 46 nations including Africa, West Asia and Europe, although mainly from Arab countries.

After "Arab boycott" the number of students from foreign countries in Arabia other than Jordan, Sudan, Syria and Palestine decreased and in stead percentage of students from African countries has shown a gradual increase from a little less than 1% at one time to 4% in 1981/82 and 9% in 1986/87.

### 2.3.2 Administrative Structure

#### (1) Organization

With an aim to foster qualified personnel required in every field of the maritime transportation industry, AMTA has enriched its organization, instructors and facilities in order to carry out its responsibility for training cadets in the necessary knowledge and skills.

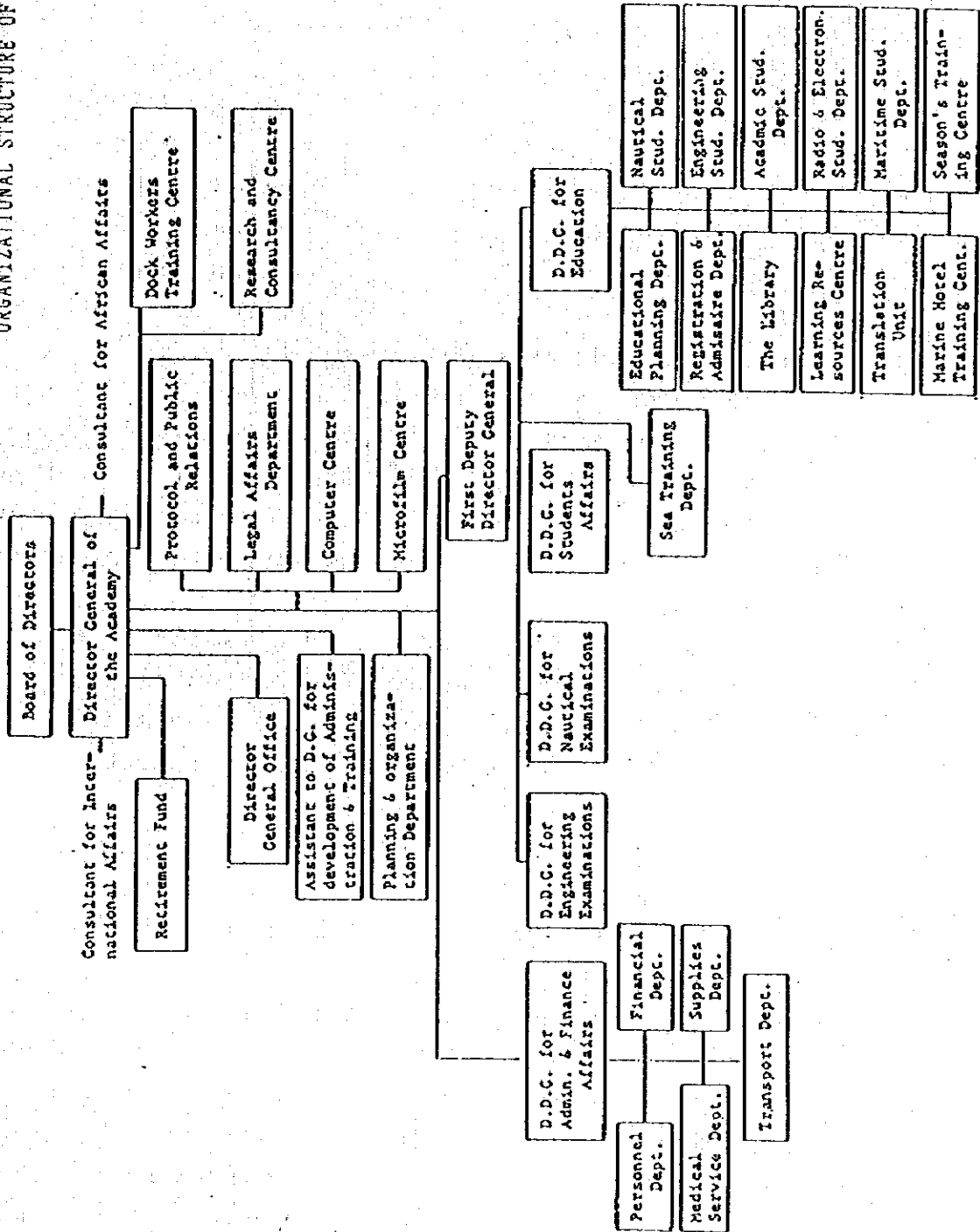
Table 2, 2.3 shows the present organization, from which we can see there are 2 divisions, administrative division and operation division, under the Board of Directors. The former handles administration, research, public relations, learning resources, computer, legal affairs, etc. and the latter education, training, license examination, etc.

The government of Egypt is issuing certificates of competency on maritime officers, but such certificates are not usually issued in most of the Middle East and African countries, except Liberia, Algeria and few others.

Incorporation of examiners office into AMTA's organization, together with its reputation that it has reached a world standard in the field of both software and hardware, has

2.3 TABLE 2

ORGANIZATIONAL STRUCTURE OF AMTA



resulted in making AMTA conspicuous among the developing countries in neighbourhood where maritime officer's licenses qualification system is not established yet.

## (2) Budget

The budget of AMTA for recent three years and this year is shown in Table 3, 2.3.

The present operating budget exceeds 7,000,000 dollars. The biggest problem AMTA was confronted with after "Arab boycott" was suspension of contributions from the Arab petroleum producing countries, to which about 90% of working capital had been dependent. However, the Egyptian government helped AMTA out of the financial difficulty by undertaking suspended contributions and also by increasing the budget for AMTA enormously since 1980. Subsidy from the government of Egypt and Sudan reached to 38% and 2% of the total budget of AMTA respectively, making a valuable contribution of stabilization of financial condition.

In addition, as Egypt restored to a member of the Arab League, the Arab petroleum producing countries are expected to resume their contributions before long and the financial condition of AMTA will become brighter thereby.

2.3 TABLE 3

ANNUAL EXPENSE OF AMTA ( IN U. S. DOLLARS )

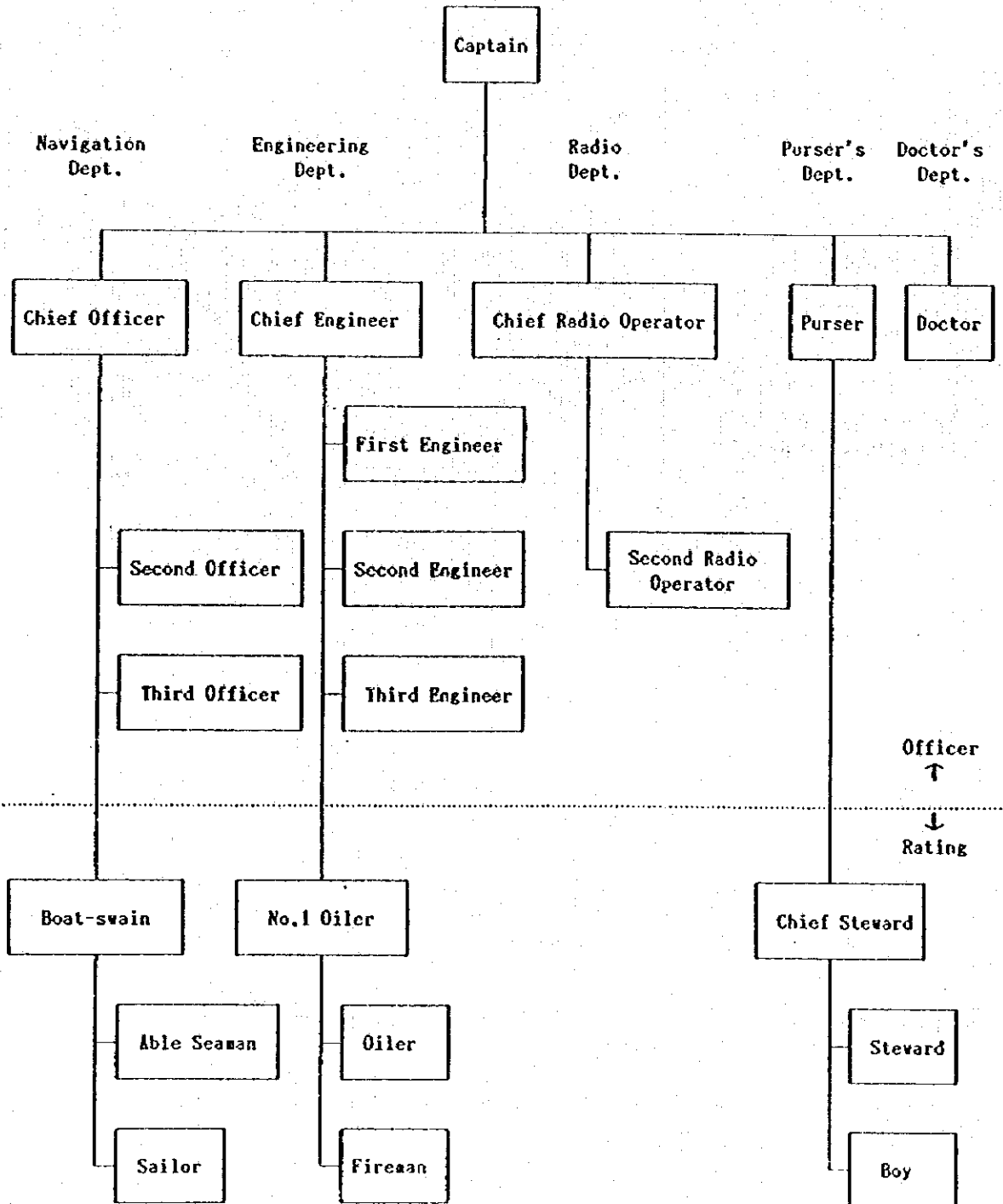
Fiscal Year / Item	1986-1987	1987-1988	1988-1989	1989-1990 Planned
<b>Expenses</b>				
- Wages & Salaries	3564256	3727930	4549503	4735804
- Materials & Running Costs of Equipment	703212	527276	346891	290317
- General Expenses	169604	150001	1835875	1890938
- Equipment Depreciation Reserves.	360589	413499	423117	790483
- Capital Investment	558440	882100	47753	56223
<b>Total</b>	<b>6,877,101</b>	<b>7,050,816</b>	<b>7,203,139</b>	<b>7,763,765</b>

2.3.3 Departments and Educational Programs

Table 4, 2.3 shows the organization and ranking of crew of conventional vessels. The persons belonging to third officer, third engineer or upper ranks are called officers and those belonging to boatswain, No.1 oiler, chief steward or lower rank are called ratings.

2.3 TABLE 4

ORGANIZATION CHART OF SHIPS' PERSONNEL



Outline of the present departments is as follows:

(1) Department of Nautical Studies

The purpose of this department is to train deck officers of ocean-going vessels. It consists of Basic Studies, in which freshmen who finished general education of high-school grade will receive training, Competency Certificate Studies in which seafarers who have worked on vessel for the required period after finishing Basic Studies will receive training for licences for 3rd officers, 2nd officers, chief officers or captains, and Academic Studies in which graduates of Basic Studies will receive supplementary lessons as to basic study in specialized field in order to obtain title of bachelor.

(2) Department of Engineering Studies

The purpose of this department is to train engineers aboard ocean-going vessels. It consists of Basic Studies, Competency Certificate Studies for licence and Academic Studies which correspond to those in Department of Nautical Studies.

(3) Department of Electronics and Computer Studies

The purpose of this department is to train radio operators aboard ocean-going vessels and technicians who are practiced in maintenance and repair of electronic machines. It consists of Basic Studies, Diploma Studies and B.Sc. Studies.

(4) Department of Academic Studies

The purpose of this department is to give such basic scholarship to the students of Departments of Nautical Studies, Engineering Studies and Electronics & Computer Studies, as will be necessary for receiving professional education.

(5) Department of Maritime Studies

The purpose of this department is to teach management of maritime industries, insurance and maritime laws in order to cultivate first-class persons in the fields related to shipping industries. There are three courses, namely Diploma Course of one year term, Bachelor of Commerce of 2 - 4 year term and Short Term Course in which study will be carried on specific theme for a period of 1 - 2 weeks.

(6) Seamen Training Center

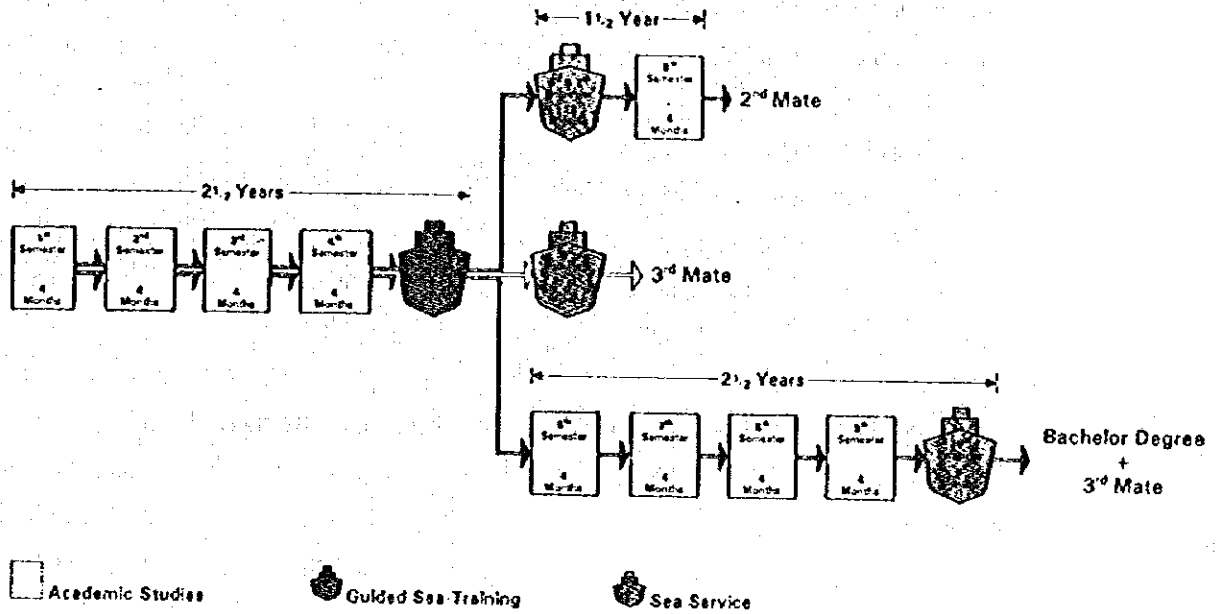
The purpose of this center is to train ratings. It consists of 3 courses of deck course, engine course and electric course. In addition to 20-week Basic Studies for newcomers, there is a 12-week Upgrading Studies for experienced ratings.

(7) Marine Catering Training Center

The purpose of this center is to train stewards for a period of 12 months. It consists of 2 courses of waiter service course and cooking course.

AMTA's educational programs, which are the fundamentals of education, are rich in variety according to courses and levels. Hereunder are shown the programs of Nautical Studies, Marine Engineering Studies, Electronics and Computer Studies, Seamen Training Center and Marine Catering Training Center, which have an especially close relationship with this project:

(1) Nautical Studies Program



1) Phase 1

For the two years of the first through the fourth semester, the students stay in AMTA's dormitories and earn 86 credits in the course of studies including general academic studies of science, engineering and language, professional studies, physical education and discipline. They also receive the fire fighting training and the survival at sea training, which are compulsory under the STCW Convention. The cadets are trained on-board a training vessel for two weeks after finishing the second semester. The main curricula of Phase-I, which are detailed in attached table in appendix 8, consist of English language, mathematics, physics, seamanship, navigation, navigational aids and instruments, meteorology, oceanography, elements of marine engine, economic geography, maritime laws, maritime transport, ship construction, stability, etc.



2) Phase 2

On-board trainings for at least 12 months are divided into two periods, namely, the first and the second period.

The first period is for training on-board a training vessel for 4 months (considered equivalent to 6 months), and the cadets are trained for about 710 hours as to how to operate a vessel under the tuition of instructors belonging to AMTA's Sea Training Department.

Followings are the detail of the on-board training.

Seamanship	150 hr.
Bridge Operations	300 hr.
Navigation and Chartwork	50 hr.
Cargo Handling	30 hr.
Engine Room Operation	10 hr.
Stability Calculations	20 hr.
Fire-fightings and Survival at Sea Operations	50 hr.
Navigational Aids and Instruments	100 hr.

---

Total 710 hr.

The second term is for a practical job training on board an oceangoing vessel of Egypt for 6 months. During this period, the students carry an exercise book prepared by AMTA, and are required to complete and submit it to AMTA after finishing the period.

3) After completing Phase 2, each cadet is qualified to proceed to one of the following three courses according to his will and ability:

. To take an examination for a 3rd mate's certificate.

- . To take an examination for a 2nd mate's certificate after having a further 6 month sea service training and the 8th semester studies.
  - . To take an examination for a bachelor degree and a 3rd mate's certificate after studying from the 6th through the 9th semester (2 years) and having the 10th semester (4 months) of sea service training.
- 4) Competency Certificates Studies for Chief Officer and Captain

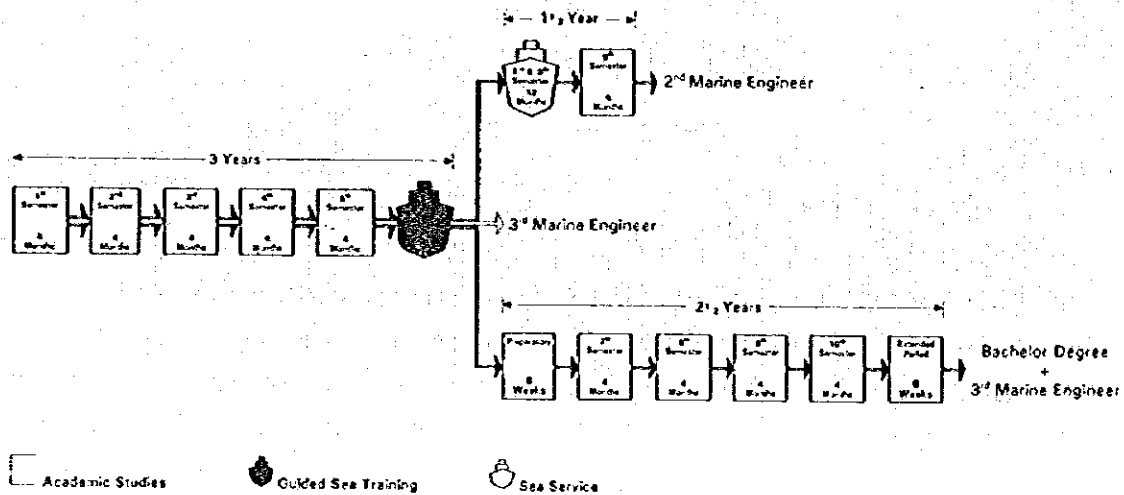
Almost all of the students who completed the basic studies in AMTA are engaged in the sea service with the certificate for 2nd officer competence and after actual experience in sea service for a period stipulated by the ordinance of Minister of Transport in Egypt, return to the course for Competency Certificates Studies in AMTA.

The requirements for admission to chief officer's course and the contents are as follows:

- . Actual experience in sea service for more than 12 months as an officer on duty
- . 711-hour curricula consist of seamanship, ship's construction, stability, coastal navigation, ship manoeuvring, meteorology, commercial knowledge, offshore navigation, etc. The requirements for admission to Captain Course and the contents are as follows:
- . Actual experience in sea service for more than 36 months as an officer on duty. However, this 36 months period could be reduced to a period of more than 24 months if he would had an actual experience in sea service as chief officer for more than 12 months.

- 604-hour curricula consist of seamanship, ship's construction, stability, navigation, navigational aids and instrument, commercial knowledge, marine engineering knowledge and control systems, etc.

(2) Marine Engineering Studies Programs



The following are aspects of the Marine Engineering Studies Programs which are different from the Nautical Studies Programs:

1) Phase 1

The cadets earn 100 credits during five semesters, which is one semester longer, and also have fire fighting training, survival at sea training and first-aid treatment training as well. And after finishing the 3rd semesters, students are trained on-board a training vessel for two weeks. The main curricula of Phase-I, which are detailed in attached table in appendix 8, consist of English language, mathematics, physics, chemistry, seamanship, strength of material, electronics,

electrical engineering, thermodynamics, control engineering, naval architecture, internal combustion engine, steam engine, etc.

2) Phase 2

During the 6th semester, the cadets receive training on-board a training vessel (710 hours/10 credits) for 4 months (considered equivalent to 6 months).

Followings are detail study of the on-board training.

Fire-fighting and Survival at Sea Operations	50 hr.
Engine Room Operations	300 hr.
Study of Ship's System and Machinery	60 hr.
Trouble Detection, Maintenance and Repair of Mechanical Equipment	200 hr.
Trouble Detection, Maintenance and Repair of Electrical Equipment	100 hr.

---

Total	710 hr.
-------	---------

3) After completing Phase 2, each cadet is qualified to proceed to one of the following three courses according to his will and ability.

- . To take an examination for a 3rd marine engineer's certificate.
- . To take an examination for a 2nd marine engineer's certificate after having further sea-training of the 7th and 8th semester for 12 months in total, and

academic studies of the 9th semester.

- . To take an examination for a bachelor degree and a 3rd marine engineer's certificate after finishing the studies of the preparatory course, the 7th through the 10th semester and the extended period (two and a half years in total).

#### 4) Competency Certificate Studies for 2nd Engineer and Chief Engineer

Almost all of the students who completed the basic studies course are engaged in the sea service with the certificate for the 3rd engineer competence and after sea service for a period stipulated by the ordinance of Minister of Transport in Egypt, return to competency certificate studies in AMTA, to sit for examinations leading to the upper grade certificate of competency.

The requirements for admission to 2nd Engineer's Course and the contents are as follows:

- . Actual experience in sea service as assistant engineer or engineer for more than 12 months.
- . 1078-hour curricula consist of mathematics, applied mechanics, heat and heat engines, English language, electronic engineering, naval architecture, internal combustion engine, steam engine, marine instrumentation, etc.

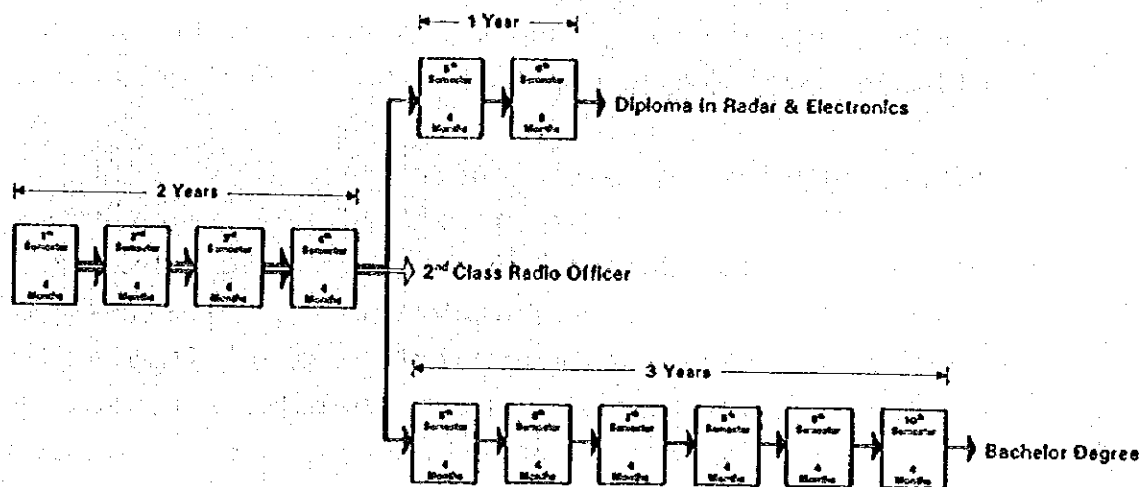
The requirements for admission to Chief Engineer Course are as follows:

- . Actual experience in sea service approved by authorities concerned for more than 36 months, during which period he had experience of working, with the cer-

tificate for 2nd engineer competence, as an engineer in a responsible position of engineering department of vessel for at least 12 months.

- 918-hour curricula consist of applied mechanics, heat and heat engines, English language, electronic engineering, naval architecture, steam engine, marine instrumentation, etc.

### (3) Electronics and Computer Studies Programs



The programs are of a double track system. After finishing the basic course (two years) for a 2nd marine radio officer, the cadets can select either of the two courses, namely, to study an additional one year (three years in total) to obtain a diploma of radar & electronic nautical appliance technician, or to complete the additional three-year academic and technical studies programs (five years in total) to obtain a bachelor degree. Although there is no sea-training in the programs, AMTA has a plan that after a new training vessel is commissioned, the students will be trained on-board for a short term. This sea-training will be carried out four times a year with 15 students each at

a time. The curricula of this studies which are detailed in attached table in appendix 8, consist of English language, mathematics, physics, electronic circuit engineering, communication engineering, law of communication, computer engineering, etc.

(4) Seamen Training Center

This Center is to educate the future crew of deck, engine and electric departments, and the trainees have 20 weeks' (536 hours) training including sea-training for 10 days (56 hours). This sea-training started in 1978 based on the recommendation of Japanese experts, and has since been functioning with excellent educational effects.

(5) Marine Catering Training Center

This Center is to educate the future marine cooks and stewards, and the trainees study for 12 months (1,152 hours) including 12 weeks (556 hours) during which they are trained on board a vessel and in a hotel.

2.3.4 Current Situation of AMTA's Facilities

AMTA's facilities are now located at Miami and Abu-Quir in Alexandria. As mentioned earlier, since AMTA's establishment in 1972 its facilities have been scattered throughout the city, but through a number of phased processes based on a plan of integration, the facilities have finally been brought together in the two locations, and are close to completion.

. School facilities in Miami

The facilities located in Miami included the original administrative headquarters of AMTA since its opening, buildings where lectures are given, the library, the computer centre,

COC (Cargo Oil Control Simulator) and the microfilm centre. With extensions and alterations having been made several times, the facilities now have almost full administrative and educational functions. In the vicinity of these facilities there are student dormitories rented from private enterprises.

With the headquarters, computer centre and COC left there as they are, AMTA is scheduled to shift all the educational facilities to a new campus in Abu-Quir at the end of this year. (For the plan of the facilities in Miami, refer to the attached data in appendix 4.)

#### Educational facilities in Abu-Quir

In the early 1980s, AMTA started the construction of its permanent educational complex on a land of 210,000 square meters in Montada facing the Abu-Quir Bay, which is an eastern suburb of Alexandria. The luxurious facilities with two lecture buildings, practice factories, a library, dormitories for students, a hospital, a mosque, stands, a ground, a refectory, a seamen training center and a guest club, have been almost completed except for some interior fittings.

The seamen training center and the engine practice factories were the first to be established in the campus, and were already being used in 1983 while the last Japanese expert team was still there. The equipment provided them is still being used, and is being maintained in an almost perfect condition. (For the plan of the facilities in Abu-Quir, refer to the attached data in appendix 4.)

#### 2.3.5 Facilities

AMTA has the following facilities for education and training



of cadets.

1) Nautical Studies Department

- . Navigational Aids Lab
- . Tanker Operation Simulator
- . Radar Simulator - ARPA Lab
- . Seaman-ship Workshop
- . The Planetarium

2) Engineering Studies Department

- . Automatic Control Lab
- . Hydraulics Lab
- . Marine Engineering Workshop
- . Electro-Technology Workshop
- . Diesel Engine Workshop
- . Metal Cutting Workshop
- . Applied Mechanics Lab

3) Electronics and Computer Studies Department

- . Radar Lab
- . Electronics Lab
- . Microwave Lab
- . Morse Labs
- . PC Computer Lab
- . Communications Lab
- . Wang Computer Center

4) Academic Studies Department

- . Two Language Labs
- . Physics Lab
- . Chemistry Lab
- . Marine Pollution Equipment

## 5) Seamen Training Center

- . Wheel-house Simulation Room
- . Navigational Aids Room
- . Ship's Model Room
- . Meterological and Signaling Lab
- . Seamanship Practice Room
- . Marine Diesel Engines and Auxiliaries Workshop
- . Electrical Technology Lab
- . Electrical Technology Workshop

### 2.3.6 Number of the Students

Outline of number of the students by faculty is as follows:

#### Nautical Studies

Basic Studies	160 persons
Competency Certificate Studies	
3rd Mate	abt. 10 persons
2nd Mate	abt. 100 persons
1st Mate	abt. 50 persons
Master	abt. 20 persons

#### Engineering Studies

Basic Studies	160 persons
Competency Certificate Studies	
3rd Engineer	abt. 120 persons
2nd Engineer	abt. 100 persons
Chief Engineer	abt. 30 persons

#### Electronics and Computer Studies

Basic Studies	60 persons
B.Sc. Studies	a certain number of applicants

#### Maritime Transport Studies

Diploma Studies	abt. 30 persons
-----------------	-----------------

B.Sc. Studies a certain number of applicants

Seamen's Training Center 90 persons

Marine Catering Training Center 50 persons

The above shows standard number of the new students by faculty. Therefore, total enrollment of the students reaches 2,200 including the students on register.

### 2.3.7 Faculty of Academy

There are 121 faculty members in AMTA, and judging from their degrees and qualifications, the depth of capable members in the academy is very great. Many obtained their degrees during their studies abroad, such as in the UK, U.S.S.R., Germany, etc., after graduating from the Egyptian Naval Academy or Alexandria University.

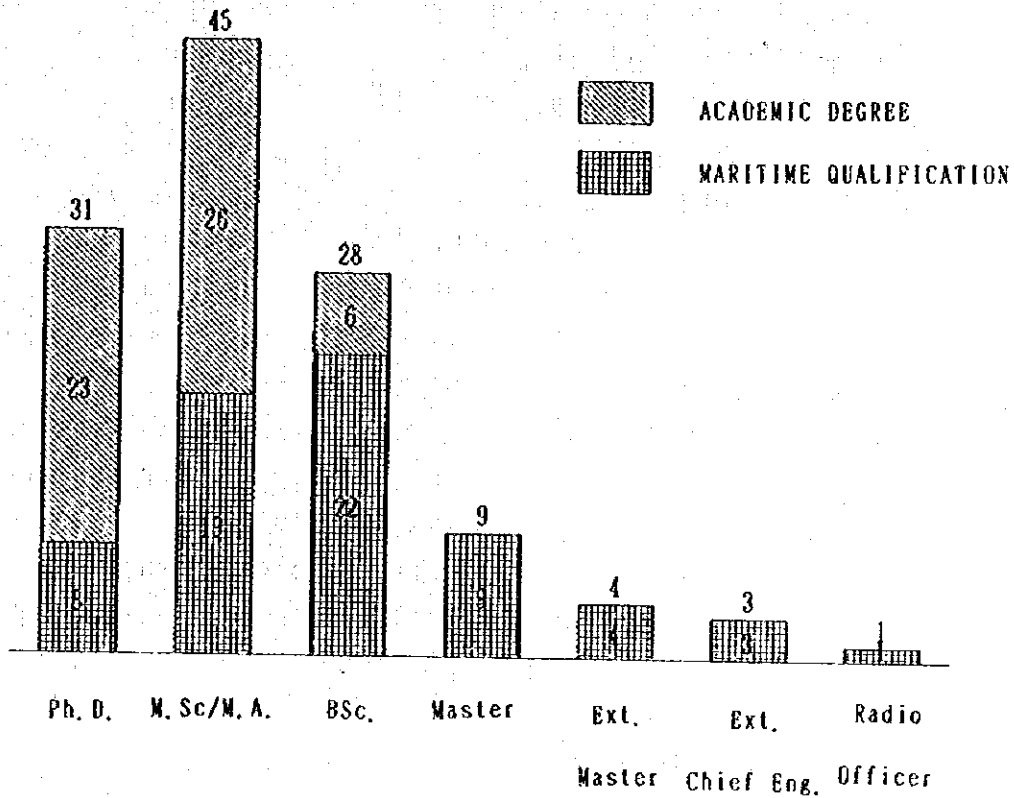
Of the 121 staff members, 49 (40%) have academic degree of doctor, master or bachelor together with maritime officer's qualifications.

42 (35%) are qualified captains and 19 (16%) are qualified chief engineers.

Table 5, 2.3 shows the faculty qualifications of AMTA.

Of the above instructors, senior instructors hold concurrently administrative positions in the execution headquarters of AMTA and there are 21 full-time clerical employees.

2.3 TABLE 5  
 FACULTY QUALIFICATIONS ( TOTAL 121 )



2.3.8 Present Condition of AIDA III

AIDA III is owned by the Ports and Lighthouses Administration of the Ministry of Maritime Transport and operated by AMTA for onboard training.

(1) Principal Dimension

Gross tonnage	2,733 tons
Net tonnage	1,421 tons

Length overall	87.36 m
Breadth	13.61 m
Draft (maximum)	4.471 m
Speed	16 knts
Main engine	2 diesel engines of 2,000 PS with 2 shafts
Generator	3 generators driven by each diesel engine of 280 PS 1 emergency generator driven by 26 PS diesel engine
Fresh Water Tank	450 tons
Fuel Oil Tank	180 tons
Owner	The Ministry of Maritime Transport
Built Country, Date.	The Netherlands, 1961
Equipment	Cargo handling equipment, 2 supply boats for supplying lighthouses radar, electromagnetic log, echo sounder, autopilot, NNSS, telephones

## (2) Actual Operation

The AIDA III is operated as a vessel on which students of AMTA receive training through actual operation, and also as a supply vessel to lighthouses which are controlled by the Arab Republic of Egypt.

The close cooperation between the Ports & Lighthouses Administration of Ministry of Maritime Transport, which controls lighthouses, and AMTA, has enabled the two different services requested to this vessel to be incorporated in a proper cruising schedule, without any inconsistency, and the vessel has attained good operation results.

The outline of the two services will be explained below:

## 1) Voyage for Training

The program of training aboard the training vessel fully explained in 2.3.3 Departments & Educational Program, is carried out combined with the above supply service to lighthouses. In other words, students of Nautical and Engineering Studies Departments are to receive 2-week short-term on-board training in the third semester and 4-month long-term on-board training after finishing education of Phase 1.

Students of Seamen Training Center and Marine Catering Training Center are to receive on-board training for a period of about 12 days.

The total number of students who received on-board training during 6 years from 1983 to 1988 amounts to 2,674.

Tables 6 - 8, 2.3 show cruising plan of the AIDA III in 1987, number of cadets trained on-board from 1983 to 1988 classified by type of training and its track chart.

From the above data we can say that this vessel has been fully utilized, but no one can deny the fact that this vessel's cruising range has been greatly restricted due to deterioration of hull construction.

## 2) Supply to Lighthouses

Lightkeepers are staying in the lighthouses in 4 islands isolated in the Red Sea, namely Ashrafi, Brother, Deplless and Shaker islands. Rotation of lightkeepers and supply of subsistence goods and fuel have been undertaken only by the AIDA III, which calls at intervals of one and a half or two months.

2.3 TABLE 6

## ACTUAL TRIPS OF AIDA III IN 1987

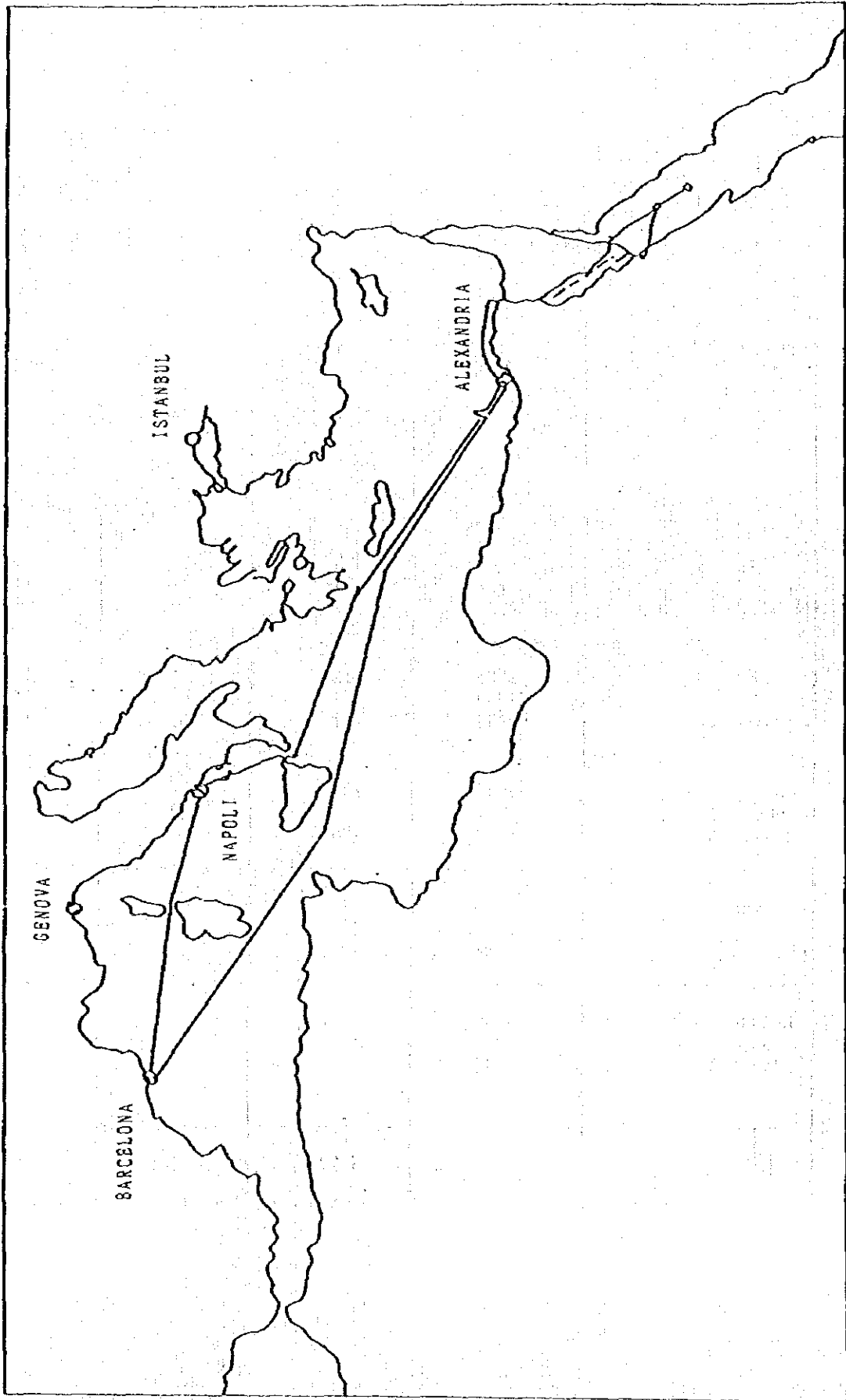
TRIP	DATE		PURPOSE	AREA	PARTICIPANTS
	FRON	TO			
First	Feb. 12	Feb. 25	Supply	Red Sea	138 Basic Study's Cadets
Secod	Mar. 19	April 3	Training & Supply	Red Sea	75 Cadets G.S.T.
Third	May. 7	May 22	Training & Supply	Red Sea	49 Catering Depastment 75 G.S.T.
Fourth	June. 3	June 24	Training & Supply	Mediterranean	75 Cadets G.S.T.
Pifth	Jul. 1	Jul. 13	Supply	Red Sea	60 Sealen's Centre
Sirth	Aug. 17	Aug. 30	Training & Supply	Red Sea	52 Catering Department 95 Cadets G.S.T.
Seventh	Sept. 16	Oct. 7	Training & Supply	Mediterranean	39 Basic Studies Cadets
Eighth	Oct. 20	Nov. 2	Training & Supply	Red Sea	95 Cadets G.S.T.
Ninth	Nov. 11	Nov. 23	Training & Supply	Red Sea	95 Cadets G.S.T. 40 Seamen's G.
Tenth	Dec. 10	Dec. 23	Training & Supply	Red Sea	95 Cadets G.S.T. 42 Seamen's C.
G.S.T. Guided Sea Training			S.C. Seamen's Centre		
B.S.C. Basic Studies Cadets			C.D. Catering Department		

2.3 TABLE 7

NUMBER OF CADETS ONBOARD AIDA III FROM 1986 TO 1988

Type of Study or Training & duration	Year			
		Egyptians	Africans	Arabs
Guided Sea Training (4 months)	1986	155	10	12
	1987	128	18	17
	1988	127	9	34
Basic Studies (2 Weeks)	1986	118	4	4
	1987	131	9	15
	1988	107	3	13
Seamens' Training Centre (2 Weeks)	1986	157	-	-
	1987	85	2	-
	1988	176	-	-
Catering (2 Weeks)	1986	39	-	-
	1987	44	-	-
	1988	42	-	-
Electronics & Radio (2 Weeks)	1986	-	-	-
	1987	12	-	-
	1988	-	-	-
<b>Total</b>		<b>1321</b>	<b>55</b>	<b>95</b>





2.3 TABLE 8 OPERATION OF AIDA III

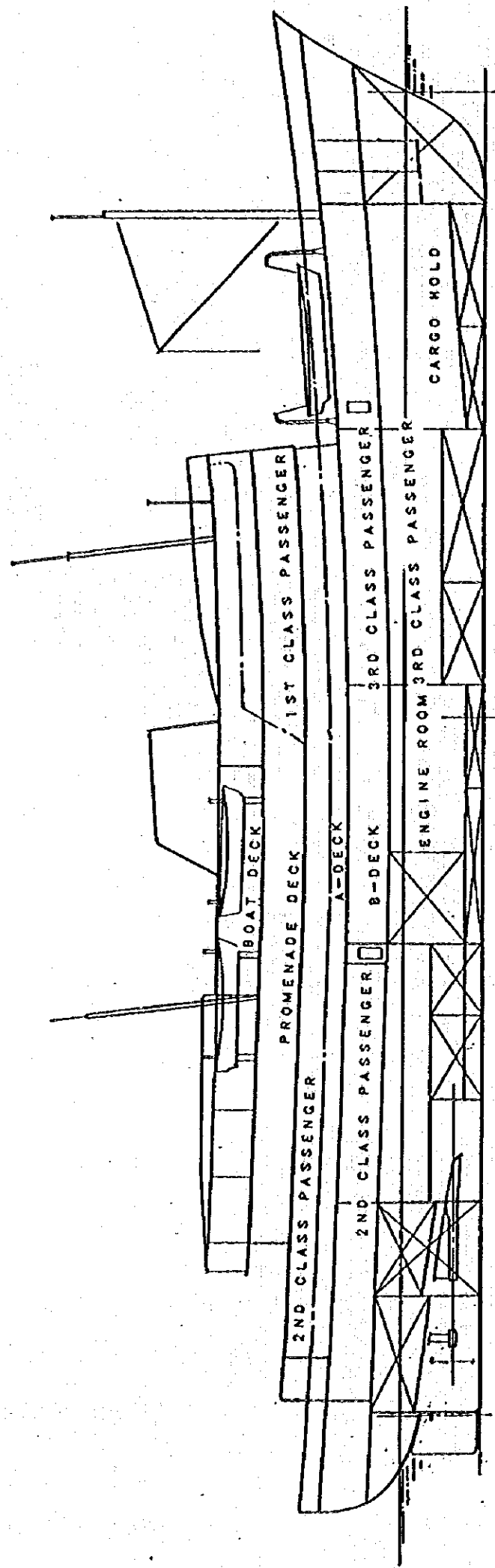
As these isolated islands are surrounded by many shore reefs, the supply vessel drops anchor in the sea of outskirts of the islands and lowers a work boat which shuttles between the vessel and the shore, transporting people and goods. This work give the trainees very suitable training theme, because this work to be finished within one or two days requires highly advanced technique in the field of operating vessel, lowering and lifting the work boat, cargo-handling, etc.

### 3) Present Condition and Problems

This vessel has been in service for 28 years since delivery. This means it has reached an age at which 3,000 gross ton class vessels are to be scrapped sooner or later. As to hull construction and engines, deterioration is of a very serious extent which is easily understood from Repair Report by Lloyds' Register of Shipping and repair recommendation letter by the inspectors. (Refer to Appendix 5 and 6)

As this vessel was not originally designed and built as a training vessel, the space of wheel house and engine room, where training is mainly conducted, is not sufficient and no lecture rooms are satisfactory.

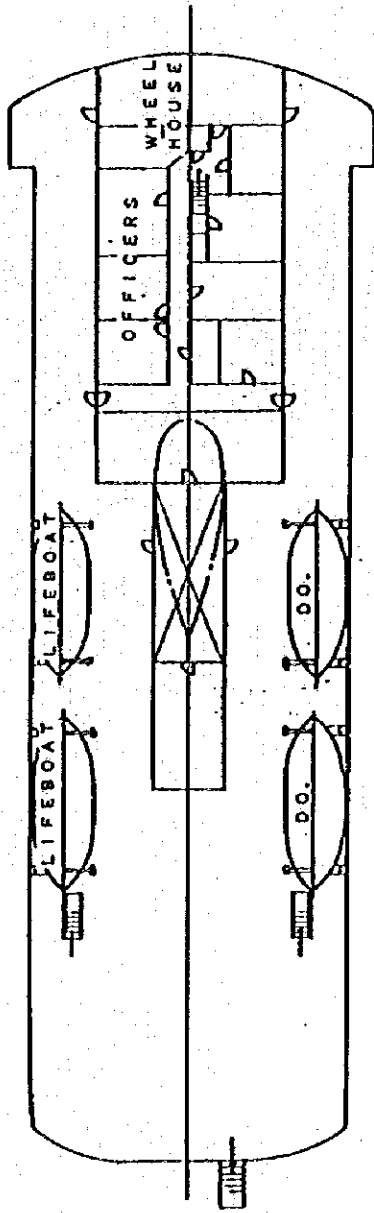
Fig. 1, 2.3 shows the general arrangement of the AIDA III.



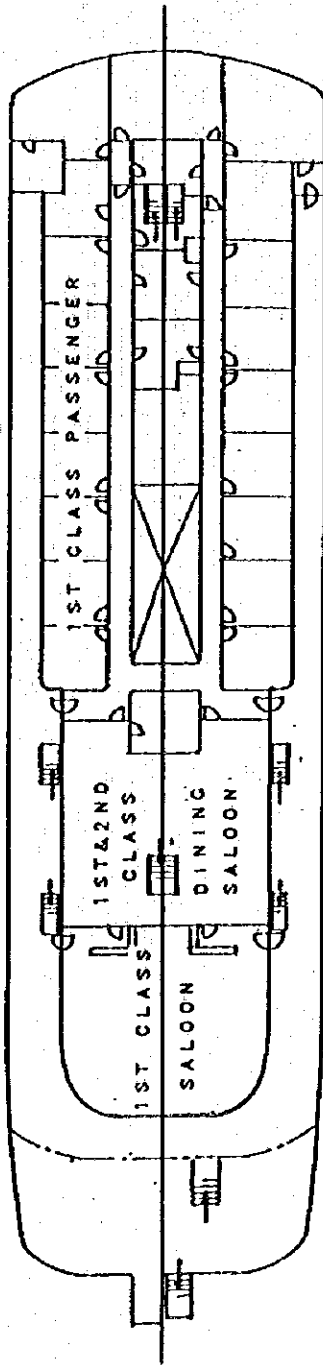
PRINCIPAL DIMENSIONS

LENGTH O.A.	87.36 m
LENGTH B.P.	76.71 m
BREADTH MLD.	13.61 m
DEPTH TO A-DECK	7.80 m
DEPTH TO B-DECK	5.40 m
DRAUGHT	6.471 m

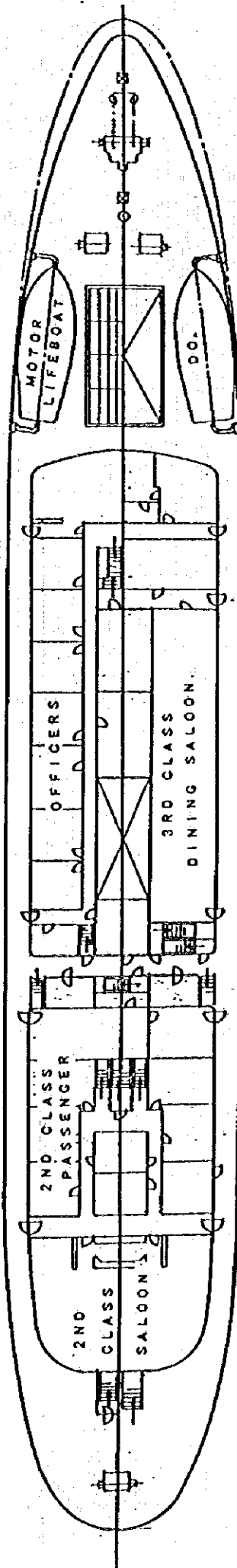
BOAT DECK



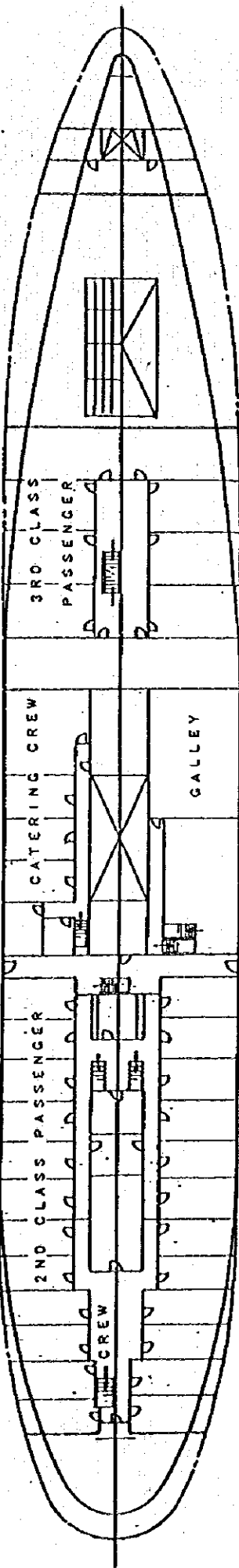
PROMENADE DECK



A-DECK



B-DECK



2.3 FIG. 1 AIDAM OUTLINE ARRANGEMENT



### 2.3.9 Exclusive Mooring Place

Before, the mother port of AIDA III was Alexandria Port and her exclusive pier was near by the Ports and Lighthouses' office. However, by reason of deterioration of the pier, public pier has been used for AIDA III instead and the exclusive pier is used as a mooring place for small vessels.

Recently, the Ports and Lighthouses Administration decided to use the exclusive pier for the new training vessel again and repair it preparing to the commencement of her operation in future.

### 2.3.10 Technical Cooperation

#### (1) The Record of Cooperation by Japan

Japan International Cooperation Agency gave project-type technical cooperation for the first four years from November 1976, to the seamen training center annexed to AMTA, and to nautical studies (tanker operation course) and marine engineering studies (diesel engine course) by dispatching experts, receiving trainees and supplying equipment. After the first four years' cooperation, JICA gave follow-up cooperation until May 1982 and thereafter resumed its cooperation for another year by dispatching experts.

Even after completion of the above cooperation by JICA, the educational activities were continued smoothly by AMTA, to which JICA gave "after-care" cooperation in March 1985, granting additional equipment and dispatching short-term experts in order to make contributions to the better running of AMTA.

In addition, since November 1985, cooperation in the training

and education for the third countries in AMTA has commenced, and JICA has continued to receive trainees from and dispatch short-term experts to AMTA every year.

The following table shows the outline of JICA's cooperation by item.

1) DISPATCH OF EXPERTS

Year	Unit		Persons
	Long-term	Short-term	Total
1977	5	0	5
1978	7	1	8
1979	11	6	17
1980	7	7	14
1981	7	9	16
1982	4	0	4
1985	0	1	1
1986	0	2	2
1987	0	2	2
1988	0	2	2
Total	41	30	71

2) RECEIVING OF COUNTERPARTS

Year	Unit										Persons
	1976	1977	1978	1979	1980	1981	1982	1986	1987	1988	Total
Pers	2	3	4	3	5	5	2	1	1	1	27

### 3) EQUIPMENT

Year	Amount (Y1,000)	Systems
1977	132,903	Auto Control, Winch, Rotar Kit
1978	106,783	Training Boat, Cargo Oil Pump Simulator, Tanker Cargo Handling Simulator
1979	122,984	2 Cycle Diesel Engine
1980	23,203	Computer, Cabinet
1981	1,797	Spare Parts
1982	Abt. 30,000	Data Logger
Total	Abt. 17,000	

### 4) DISPATCH OF SURVEY TEAM

TEAM	Period	Pers	Remarks
Feasib. Study Team	1974. 7. 31 ~ 8. 14	4	
Prel. Study Team	1975. 10. 20 ~ 11. 5	4	
Execution Team	1976. 10. 22 ~ 11. 10	5	
Teaching Team	1978. 3. 10 ~ 3. 17	2	
Evaluat. Team	1980. 10. 4 ~ 10. 19	4	
After-care Team	1984. 7. 6 ~ 7. 18	3	

## (2) The Record of Cooperation by the Third Countries

### 1) UNDP

UNDP approved AMTA Project and offered financial assistance of 2,300,000 dollars. This assistance consisted of providing equipment and dispatching experts. The main equipment under this grant aid were radar simulators, machine tools for practical training in diesel engine course, and others.

As for the expert service, the experts of captain/chief engineer level from IMO were dispatched for the first five years from 1972 to 1977, and a large team of more than ten experts reinforced the AMTA teaching staff.

However, IMO experts were reduced year by year and only a few experts on examination of certificate continued his service for another two years from 1977.

### 2) U.S.A.

Assistance by the U.S.A. was made by dispatching an expert on maritime education during the period 1977 to 1978. The expert reorganized the education system of AMTA by introducing three-faculty system, and paved the way for introducing the credit system. He had been a teacher in the U.S. Naval Academy and played an important role in establishing a foundation for the faculty system in AMTA.

In 1980 USAID offered grant aid of about 260,000 dollars in establishing a computer centre in AMTA for two years until 1982.



### (3) AMTA's Cooperation to Foreign Countries

AMTA, as a leading maritime education institute in the Middle East and Africa, has played an active part in promoting maritime education in developing countries in this region.

Regional seminars in maritime education were often held under the sponsorship of AMTA. AMTA admits to be a secretariat of Conference of Maritime Education Institutes in Africa and dispatched many visiting professors to Cote d'Ivoire, Ghana, United Arab Emirates, Oman, Tunisia, Indonesia, Bangladesh, Nigeria and World Maritime University. Not a few projects have been carried out continuously for several years.

#### 2.4 Background and Detail of Request

##### 2.4.1 Intention of Request

The Government of the Arab Republic of Egypt prioritizes the promotion of marine transportation in order to develop the national economy, and to realize it, education and training of personnel for maritime industries become an important matter. The situation is the same for countries in the Middle East and Africa, and the education of capable personnel is also an important subject for each country.

Against this background, AMTA was established in Alexandria, Egypt, by the Arab League in 1972 as an advanced educational institution for marine transportation. AMTA has received and educated cadets from the Middle East and Africa, and has trained seafarers for ocean-going vessels.

AMTA has trained and educated cadets based on international

conventions, such as the STCW Convention, and has provided independent training service as an institute to train cadets and to issue certificates of competency to seafarers in this area.

However, the AIDA III, a training vessel of 2,733 tons which has been used for on-board training has become considerably deteriorated during its 28 years of operation, and this has caused difficulties in the operation and education programs. Therefore, the Egyptian government planned the replacement of the vessel as an urgent matter and requested Japan for grant aid to construct a new training vessel.

Since the AIDA III is now also engaged in maintenance and supply services for the lighthouses in the Red Sea, the Egyptian government requested the same services for the new training vessel, which is indispensable to safe navigation in the Red Sea. As the Suez Canal is one of the greatest resources of national revenue for Egypt, it is a very important duty for Egypt to secure and maintain the safe navigation in the Red Sea leading to the Suez Canal.

#### 2.4.2 Outline of the requested Vessel

The particulars of vessel requested by the Egyptian Government are as follows:

Gross tonnage	Abt. 3,000 tons
Length overall	Abt. 90 m
Breadth	Abt. 14 m
Draft	4 - 5 m
Complement	270 persons
Crew	58 persons
Teaching staff	20 persons
Cadets	160 persons
Persons related to lighthouse	32 persons
Service speed	13.5 knots

Main engine	2 diesel engines with 2 shafts
Bow thruster	1 set
Generator	3 sets
Fuel oil tank	Necessary capacity for 20 days' voyage
Others	Equipment for lighthouse maintenance

#### 2.4.3 Vessel Management and Use

The new training vessel is to be used for education and training of the cadets of AMTA and also for maintenance services of 4 lighthouses in the Red Sea.

The vessel is to be owned by Ports and Lighthouses Administration and utilized by AMTA as a training agency.

Management and maintenance of the vessel is to be carried out by both Ports and Lighthouses Administration and AMTA.

