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Critical assessment of the training and examination of maritime personnel in the southern ports of the Republic of Yemen

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A CRITICAL ASSESSMENT OF THE TRAINING AND EXAMINATION OF MARITIME PERSONNEL IN THE SOUTHERN PORTS OF THE REPUBLIC OF YEMEN

by

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Republic of Yemen

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The contents of this paper reflect my personal views and are not necessarily endorsed by the UNIVERSITY.

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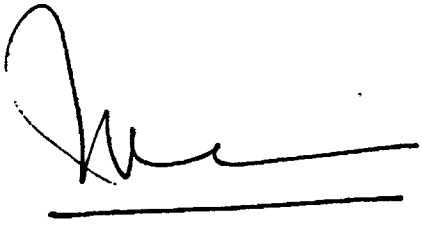

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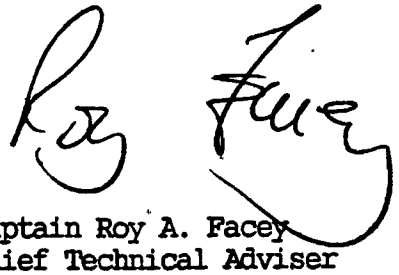

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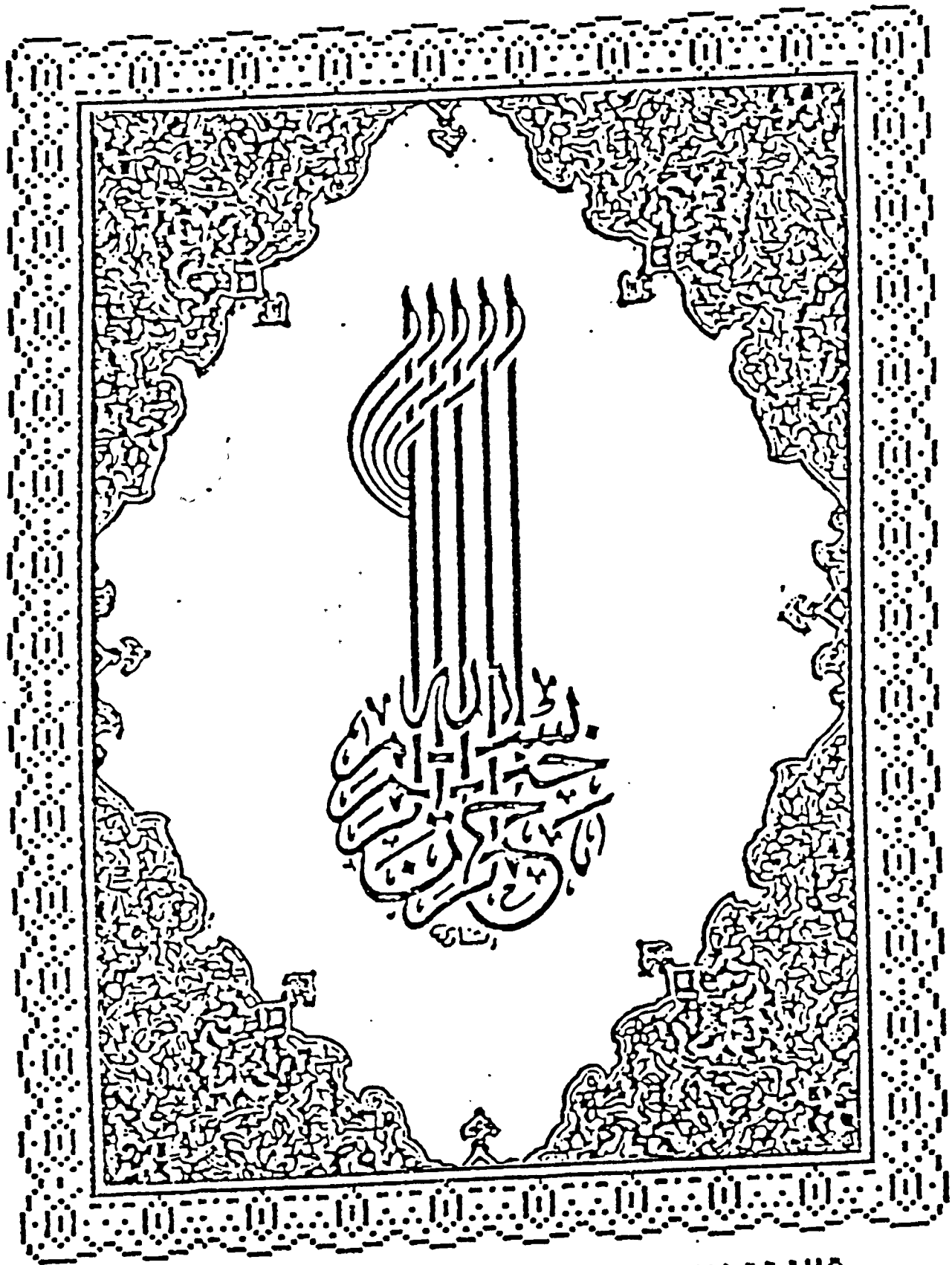

IN THE NAME OF GOD, MOST GRACIOUS,

MOST MERCIFUL

To:

My wife Aliya,
My daughter Heba,
My son Husam,

who endured my absence with patience during my study in Sweden..

A critical Assessment of the Training and Examination of Maritime Personnel in the Southern Ports of the Republic of Yemen

Chapter Four: Examination of Port Conditions and Operating Practices

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- Capt. Shakeeb Ahmed Obeid, Assistant Harbour Master for Maintenance .

- Capt. Barakat Ali Derwish, Assistant Harbour Master at Little Aden Oil Harbour.

- Capt. Ali Ahmed Ali, Senior Pilot.

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- Mr. Ahmed Muthanna, Deputy of Director of Planning in the Yemen Ports Authority.

- Mr. Fuaad Mana, Officer of Training in the Yemen Ports Authority.

- Mr. Mohsen Bereik, Director of Yemen Navigation Line.

- Mr. Ahmed Salem, Tug Engine Greaser.

Malmo November 1990.

ABSTRACT

Port of Aden, which was once famous in bunkering and transit trade, has passed through a recession period in the last two decades due to various reasons. At present the Government is taking substantial measures for developing and modernizing the Port of Aden so as to accommodate modern large specialized vessels. She also constructed another two secondary Ports, Port of Mukalla and Port of Nishtun, so as to promote the infrastructure in Yemen.

In addition, the Government established a Maritime Training Centre to train the maritime personnel in the Port of Aden and other ports in cargo operations and other specialities needed in the port.

The aim of this paper is to describe the new development which occurred in all ports in the south part of the Republic of Yemen, to assess the present educational level and qualifications of the marine personnel in those ports and to propose new training and education programmes.

The contents of this paper consists of six chapters:

Chapter one describes the background of all ports in the south part of Yemen.

Chapter two concerns the maritime sectors, the marine personnel in the ports of the south part of Yemen, the existing system of education, training and

examination.

Chapter three is concerned with the infrastructure of the ports in the south part of Yemen.

Chapter four describes the port conditions and operating practices.

Chapter five the need for maritime training, education, proper personnel selection and examination, and the proposed courses for such personnel.

Chapter six, which is the concluding chapter, the recommendations for the improvement of the educational level of maritime personnel through further development of MTC are recommended.

List of Abbreviations

ARC	Aden Refinery Company
ARPA	Automatic Radar Plotting Aids
B.P.	British Petroleum
Colreg.	Collision Regulations
DOS	Disk Operating System
dwt	Deadweight tonnes
FAO	Food and Agriculture Organization
F.G.	Foreign-going
GDR	German Democratic Republic
GMDSS	Global Maritime Distress and Safety System
GRT	Gross Registered Tonnage
ILO	International Labour Organization
IMDG	International Maritime Dangerous Goods
IMLA	International Maritime Lecturers Association
IMO	International Maritime Organization
IPP	Improving Port Performance
IRNSLC	International Radar and Navigation Simulator Lecturers Conference
LBP	Length Between Perpendicular
LOA	Length Over All
MARPOL	Marine Pollution
MET	Maritime Education and Training
MTC	Maritime Training Centre
NATSHIP	National Shipping Company
NDY	National Dock Yard
OHP	Overhead Projector
SAR	Search and Rescue

SE	South East
SPM	Single Point Mooring
STCW 1978	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978
SW	South West
SWL	Safe Working Load
UK	United Kingdom
UKC	Under-keel Clearance
UNCTAD	United Nations Conference on Trade and Development.
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
USSR	Union of Soviet Socialist Republics
VHF	Very High Frequency
YNL	Yemen Navigation Line
YPA	Yemen Ports Authority
YPSC	Yemen Ports and Shipping Company

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CHAPTER ONE

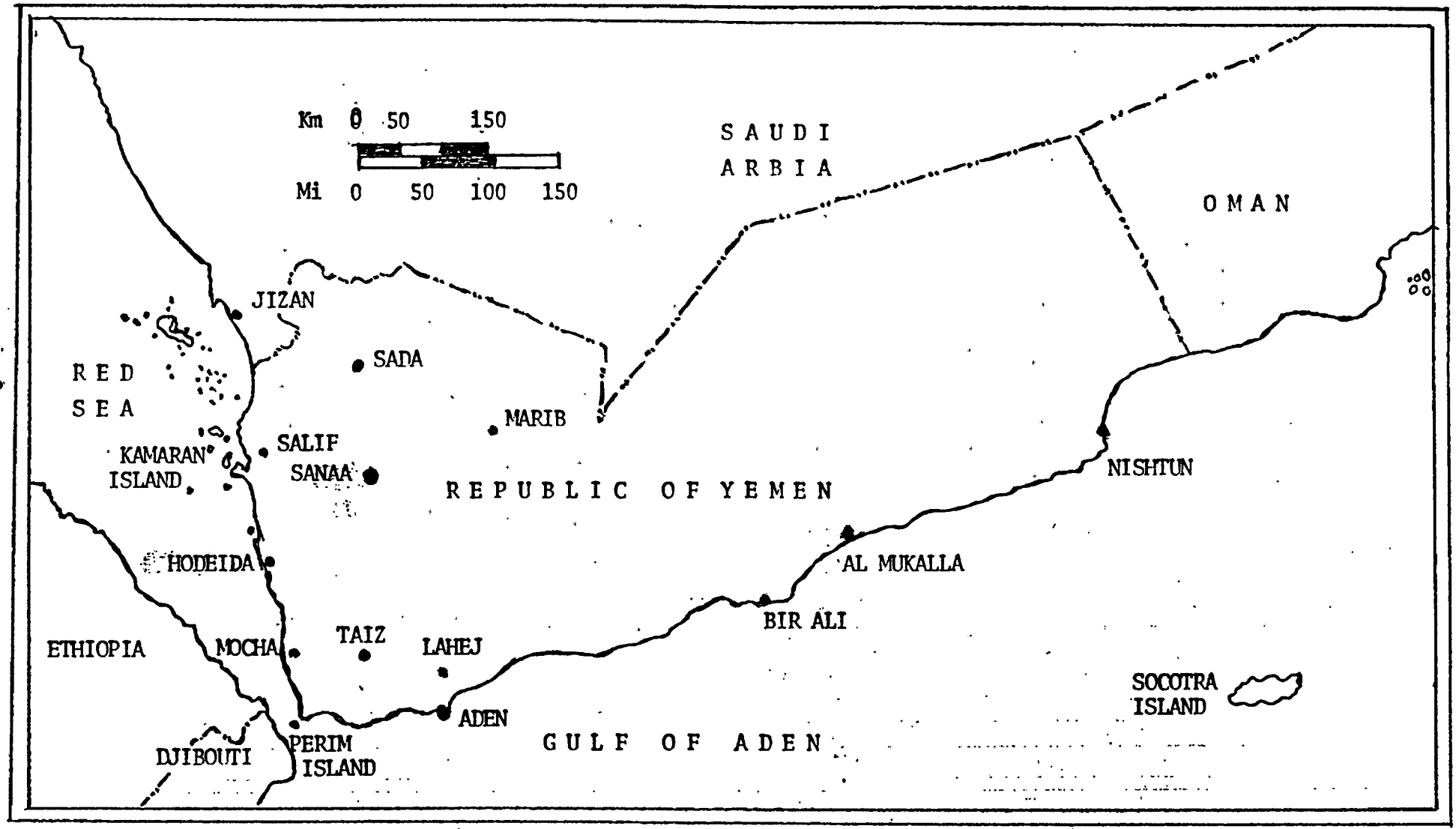
Background and History

1.1 Port of Aden:

The Republic of Yemen is situated in the south west corner of the Arabian peninsula. Aden is its economic and commercial capital and main port which lies in an important strategic position close to the southern entrance of the Red Sea. It used to be one of the busiest bunkering ports and transit cargo depots in the world. It reached its peak in the commercial activities during the British occupation in the 1960s when the number of ships calling at Aden was 500 per month.

Throughout the history of the Port of Aden, it was well-known by its maritime trade due to its strategic location in the main route of trade from China, India and east part of Africa to Europe. Merchant ships carried gum, myrrh, hides, frankincense and spices by the Red sea to the Mediterranean Sea through Egypt and Syria where the Italian merchants transported the merchandise to Europe. Through this trade Yemen became acquainted with the Greek, Roman, Babylon and Phoenician civilizations.

In the sixteenth century the Port of Aden enjoyed prosperity and was known worldwide as a centre of trade. Historians described it with



REPUBLIC OF YEMEN — CHART (1)

different expressions such as "Eastern Gibraltar", and "The Eye of Yemen". This fame made Aden a target for capture by the Portugese who came around the Cape of Good Hope looking for another route to gain access to the origin of spices trade. However they failed to capture Aden.

The importance of Aden decreased during the dominance of the Ottoman Turks in Arabian Peninsula due to utilization of the Port of Mocha as their main port for exporting the coffee crop. The British, among other countries which were looking for other routes to get access to the origin of spices, occupied India and looked at Aden, Mukalla, Perim Island and Socotra as important stations for supplying her steam ships with coal. The French occupation of Egypt in 1798 and the threat to British interests in India forced Britain to establish a dominance in the Red Sea and Gulf Area. In 1799 Britain occupied the Island of Perim to prevent Napoleon from passing through Bab al-Mandab, but due to the shortage of water they left the island in the same year for the mainland where friendly relations were established with the local Sultan of Lahej.

In 1830 Mohammed Ali, the Khedive of Egypt, invaded the peninsula giving the British the opportunity of confirming their interest in Aden. As Captain Haines described the importance of Port of Aden "The Port of Aden was the most important of Red Sea ports and whoever controlled her would dominate the east-west trades".

In January 19, 1839, the British forces occupied Aden under the command of Captain Haines with the support of the Government of Bombay. From 1839 the British governed Aden for 129 years until 30 November, 1967, when the British withdrew from Aden. During the occupation the Port of Aden began to restore its past glory particularly after the opening of the Suez Canal in 1869.

The Port of Aden was not as it is today. Originally it was at Sirah in Crater, but as there was no adequate depth for large ships the port transferred to Tawahi, where dredging was started in December 1890.

During the British occupation of Aden, the Port of Aden was operated, directed and managed by British personnel. The maritime and commercial activities were carried out by foreign companies and the first company that started its activity at Aden was Luke Thomas at 1857. Immigrants of different nationalities were encouraged to settle at Aden particularly Indians,Pakistanis and Somalis. Pilotage service was carried out by British Personnel and tugmasters were either Indians or Somalis with few chances for national citizens in the lower ranks.

In 1971 the first national Arab pilot joined the pilotage service after he had graduated from United Kingdom, he was followed by others who had graduated from the United Kingdom, Egypt and Sharjah.

In July, 1982, the last two foreign pilots left the Port of Aden and from that time the pilotage service has been completely carried out by nationals.

1.2 Maritime Education

According to the Port Authority records the first steps for maritime training of Yemeni students started in 1960 and the first two cadets, one for deck and the other for the engine room were sent to the navigation College at Warsash in the U.K.in 1961. A part of the annual issue of the 1961/62 Bulletin of Yemen Port Authority (Previously called Aden Port Trust), page 61 under column "Port Trust scholars and training", is quoted here.

"During the past few months a good deal of further progress has been made with schemes for the training of Adenis to fill senior administration, marine and technical posts in the Port Trust. Two students from Aden college, one whom is a protectorate boy, have been sponsored for deck officer training and have left for the United Kingdom to start their initial course at the School of Navigation, University of Southampton, Warsash, while another Aden college boy has been sent to start training in the United Kingdom to be a marine engineer."

Thereafter students were sent to the U.K. up till 1967 which brought the total number of deck

cadets up to fifteen and engineering cadets up to two.

After the announcement of independence of the south part of Yemen on 30th November, 1967, the Government was unable to provide port services at the Port of Aden without depending upon non-Yemeni personnel. The scholars who had been sent to the U.K. for studying had not yet completed their training and the British during occupation did nothing to prepare the nationals for tugmaster and pilot functions. The tugmasters were non-Yemeni. Furthermore the British pilots withdrew between one and two years after the withdrawal of the British forces from Aden. The Government was in a difficult situation. The problem was solved by assistance from Egypt which sent pilots, besides the Government signed contracts for extra pilots with other countries such as Pakistan, India, USSR and GDR.

As the Government did not want to maintain the situation depending upon the foreign qualifications it accepted the challenge and began to establish a maritime education centre in the country. The Government therefore embarked on the following steps:

- to start a campaign to eradicate illiteracy among the local tugmasters, who began to replace the non-Yemeni, and the other ratings

- to established a nautical institute for

nautical studies in 1970 for deck officers.

Students joining the nautical institute studied for two years after which they went to sea for at least 18 months. Then they were sent to Alexandria - Egypt for a 4.5 months refresher course to prepare for certificate of competency as a second mate. The later certificate for first mate and master were also studied for in Alexandria.

The nautical institute remained opened only for 4 years, and 2 batches were graduated for theoretical studies during this time. The first batch consisted of 20 students sponsored by Yemen Ports Authority (YPA) to serve as pilots at the Port of Aden after completing their studies and having their certificate of competency as master. The second batch consisted of 17 students sponsored by different parts of the maritime sector such as Yemen Navigation Line (YNL), Ministry of Fish Wealth and Ministry of Defense.

The nautical institute was closed for the following reasons:

(i) Before the opening of the institute there had not been any planning for its long-term future activities.
(ii) There was an overcapacity of graduates for some maritime sectors such as YPA and YNL.
(iii) The government wished to support the establishment of the Arab Maritime

Transport Academy (AMTA) in 1970 at Alexandria as a regional Academy for all Arab countries; and not compete with Alexandria by maintaining a separate national training centre for deck and engineer officers.

By 1981 the cadets who graduated after completing their studies at Alexandria and Sharjah had replaced all the foreigners in the different marine sectors in the Port of Aden.

It is worth mentioning that during last years since independence no programme had been considered to educate and upgrade the middle and lower level of the marine personnel on board the harbour crafts and on board the national fleet based in the Port of Aden. This was evident particularly when the Government decided to develop and extend the port of Aden to cope with the new developments which took place in world shipping. It became essential for manpower at the port to be upgraded in order to operate and manage the port efficiently and safely.

The Government came to a decision to establish a maritime centre for this purpose which is funded by Government with support from the UNDP and assisted technically by IMO experts and consultants. The centre was inaugurated in May, 1989. (See Chapter 4 for details of this Project)

1.3 Effect of Closure of Suez Canal on the Port

The Port of Aden was one of the principal free ports in the world for bunkering and for cargo transit. It reached its peak of commercial and maritime activities in the sixties when the number of ships called at Aden reached a maximum of to 6246(1) ships in 1966. The closure of the Suez Canal in 1967 gave a hard blow to the Port of Aden. The number of ships dropped down to 3100(2) at the end of the same year. The seven years period of closure of the Suez Canal had great impact upon the commercial and maritime activities and it put an end to the port's prosperity. In 1974 the number of ships that called at Aden was a minimum of 1233.(3)

During the closure of Suez Canal major changes happened in the world, especially in port development and expansion and shipbuilding, where technology dramatically developed. This resulted in:

- development and construction of new ports in the region, funded by oil wealth provided with modern facilities;
- low bunkering prices in countries on the Arabian Peninsula which became serious competitors to the Port of Aden;
- emergence of different types of specialized ships such as container ships, Ro-Ro ships

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(1),(2),(3) Yemen Port Authority Statistics

and bulk carriers;
- increase in size and draft of such ships in order to meet the requirements of the long passage round the Cape of Good Hope to reach their destination.

Additionally, two other factors contributed to the decline of the Port of Aden. These two factors were:

(a) the abandonment of the free-port status of the Port of Aden in 1970;
(b) the impositions of import restrictions to conserve foreign exchange in 1971.

After the re-opening of the Suez Canal, the Port of Aden could not restore its position, as the trend was directed more towards containerization than breakbulk cargoes. Containerisation requires expensive port facilities, adequate and efficient handling equipments and trained personnel to operate them. So the system of loading and discharging in the Port became out of mode and could not meet modern harbour requirements. This was due to:

(i) the unavailability of shore berths for deeper draft vessels;
(ii) inefficient use of time and labour in handling cargo via barges and increased chance of damage due to the double handling of cargo.

A feasibility study has been carried out by a British Consulting Engineers " Coode and Partner " in May, 1982 for the development of Port of Aden. The result of their study was a proposal to extend the H.T.Q. westward to construct four new berths for general cargo, container ships and Ro-Ro ships and reclamation of the area behind the berths. (See para. 3.1.6)

CHAPTER TWO

Maritime Sectors, Marine Personnel and existing System of Education, Training and Examination of such Personnel

2.1 Maritime Sectors

The maritime sectors of the Republic of Yemen come under the responsibility of the Ministry of Transport and their activities are coordinated by the Yemen Ports and Shipping Corporation (YPSC). They are managed by a Board consisting of the Directors of the four state-owned maritime sectors that form the YPSC and headed by the Minister of Transport. The four components of the YPSC are:

.1 Yemen Ports Authority (YPA): is a maritime sector which has the largest number of harbour crafts consisting of tugs, pilot and mooring launches, passengers and crew launches, floating cranes, a dredger, water barges, cargo lighters etc. which are operated by a large number of maritime personnel. YPA provides pilotage service, lighter services, stevedoring and administration for the ports of Aden, Mukalla, and Nishtun, all of which are being developed and extended.
(Summary of the Harbour Craft in Port of Aden and the other secondary ports are in Appendix 2(b))

.2 **Yemen Navigation Line (YNL):** owns and operates three coasters namely: Aden, Mukalla and Perim of deadweight 1500, 1891 and 620 tons respectively. In addition, it operates three dhows namely: Abood, Al-Mahroos and Al-Mutasahil of deadweight 120, 75 and 90 respectively.

.3 **National Shipping Company (NATSHIP):** the sole agency that provides Agency facilities for all ships calling at Yemen Ports including clearing, forwarding and transshipment services.

.4 **National Dock Yard (NDY):** provides ship repairing dry docking, steel fabrication, small vessel construction, foundry, forging, under-water inspection and marine engineering facilities.

In addition to the above-mentioned maritime sectors there is another maritime sector, **Aden Refinery Company** (ARC), a state-owned company and an autonomous body belonging to Ministry of Minerals and Energy. The Refinery owns a small tanker called " Ghna" of 3184 dwt in addition to the harbour craft mentioned in Appendix 2(b).

2.2 Existing System of Education, Training and Examination of Marine Personnel:

There are no theoretical courses concerning maritime education for training the marine personnel neither on board the harbour crafts nor

on board the national fleet. Such personnel as:

- Motor boat men (deck and engine)
- Pilot launch men (deck and engine)
- Assistant Tugmasters (Serang) and Greasers
- Tugmasters and Engine Drivers
- Pilots
- Seafarers (Ratings)

(Summary of the marine personnel on board the harbour craft and on board the national fleet in Appendix 2).

The Marine Department in the YPA controls the issuing of licences for all the harbour crafts and the licences for the personnel who are operating those crafts accordingly. Licences are given to those who pass an oral examination and a practical test.

2.2.1 Motor boat men (deck and engine)

The motor boat men of the mooring boats are under the responsibility of the marine Department in the YPA. Personnel at the beginning of their career are employed as rating trainees (Lascar) for a period of not less than 3 years. They are trained on the job on board the harbour crafts and assist in mooring of ships such as taking ship's ropes to the bollards at the quay or fastening on the mooring buoy. After three years they can apply for a practical test on the mooring boats followed by an oral test on boat-manoeuvring, light and flag signals (specimen of the examination instruction

in Appendix 1A. Before licensing another 3 weeks practical training on engines in the Technical Department in YPA is necessary to train on simple maintenance and how to operate the engine, check temperatures, water levels and oil levels. After passing this training period, two licenses are granted:

- one licence for in-charge of a mechanically propelled craft (a specimen of the license is in Appendix 1(b)
- one license for Engine-Driver of a motor launch. (a specimen of the license is in Appendix 1(c)

Thereafter they can choose to work either on deck or in engine room. Before becoming in-charge of a mooring boat or the engine room he is first employed as gang foreman on board the tug for a period not less than 3 years to get acquainted with the work on deck or in the engine room after which he is promoted to the mooring boat as a helmsman (succani) or as engine driver.

Motor boat men from other marine departments or sectors are subject to the same examination after they serve a sufficient period of sea training.

Pre-sea Level of Education: The level of education of this personnel is not sufficient for future functions such as tugmasters. This particularly is true for those employed before 1980. Of those employed after 1980 some have an intermediate or

secondary level of education.

2.2.2 Pilot-launch men (deck and engine)

There is no examination for pilot-launches men . The motor boat men (see 2.2.1) after serving on board the mooring boat as helmsman (Succani) or engine driver, can be promoted as Succani or engine driver on board the Pilot-launch. This means after 8 years of work on the job since the first appointment.

Level of Education: The same comments apply here as found in 2.2.1 regarding the level of education.

2.2.3 Assistant tugmaster (Serang) and Greasers

These personnel are recruited from the pilot launch succanis and engine drivers. After working for not less than 3 years on board the pilot launch i.e. after 12 years from their first appointment, they are promoted as Assistant Tugmasters (Serang) or Greasers respectively.

The serang supervises the personnel's work on deck and at the same time works as a trainee under the supervision of the tugmaster as he should be a successor of the tugmaster when the latter retires.

The greaser is the assistant of the engine driver and at the same time a trainee under the

supervision of the engine driver training him an engine work in the tug to prepare him for the function of tug engine driver when the latter retires.

The engine driver's function on board the harbour crafts is to operate the engine, checking the temperatures and oil and performing daily maintenance of the engine. The major repairs and engine overhauls are the responsibility of the technical Department which have a complete staff of specialized engineers to do the job.

Level of Education: The same comments apply here as found in 2.2.1 regarding the level of education.

2.2.4 Tugmasters and Tug Engine Drivers

Tugmasters and Tug Engine Drivers are recruited from the Serangs and the Greasers. Before being appointed as Masters or Engine Drivers they have to undergo a practical examination and oral test. This is under the supervision of the Harbour Master. When they pass they are granted a certificate of competency as Tugmaster or certificate of competency as Engine-Driver of a tug.

The oral test for the tugmasters comprises the following subjects:

- lights and signals
- knowledge about the number and the names of berths in the port

- procedures when leaving the Inner Harbour to the Oil Harbour
- rules of the road
- actions in case of fire, pollution and incidents
- procedures when taking the responsibility of the tug
- actions in case of engine trouble
- daily work routine on the harbour craft
- knowledge of seamanship
- knowledge of the whistle communication in the port and the use of VHF
- equipment on board the harbour craft
- responsibility towards the crew.

Level of Education: The same comments apply here as found in 2.2.1 regarding the level of education.

2.2.5 Pilots:

All pilots are graduated from the Arab Maritime Transport Academy in Sharjah, UAE and hold a certificate of competency as master foreign-going. There are no theoretical courses concerning pilotage and the pilot who joins pilotage service has to be trained on the job. He has to accompany the senior pilots on not less than 200 ships. This will take a period of between 2 and 3 months depending upon the traffic in the port. After completing the 200 ships he is to undergo a practical examination for handling ships in the Inner Harbour and the Oil Harbour. This is followed by an oral test concerning general knowledge of the pilotage area and berths and

some of the procedures. When he passes he is granted a pilot's license (specimen of the license in Appendix 1(d) page 148).

At the commencement of his career as a pilot he is allowed to handle limited tonnage. Thereafter this limitation opens gradually until he is fully licensed to handle all sizes of ships. This is fulfilled in three stages:

First Stage : After getting the license he is allowed to handle cargo ships up to 15000 GRT and tankers up to 35000 dwt

Second Stage: He is allowed to handle all sizes of cargo ships and tankers up 55000 dwt

Third Stage : In this stage all restriction are removed and the pilot is allowed to handle all sizes of ships within the capability of the port.

The period of each stage depends upon the assessment of the Port Officer, the reports about the pilot and whether he is free from any incidents during his job.

2.2.6 Seafarers (Ratings)

There is no organized training for the ratings employed in the national fleet. They are engaged on board ships on ad hoc basis without any prior training in elementary seamanship skills and safety aspects of a seafaring career.

Level of Education: The educational level of the ratings on board the national fleet is very low and some of them are illiterates.

2.3 Physical Requirements

The above-mentioned maritime personnel should be medically fit, have good hearing and good eye sight including passing the colour vision to ensure that he is free from colour blindness. In addition they must be able to swim.

CHAPTER THREE

Infrastructure of the Ports in the Republic of YEMEN

3.1 Port of Aden

3.1.1 Port layout

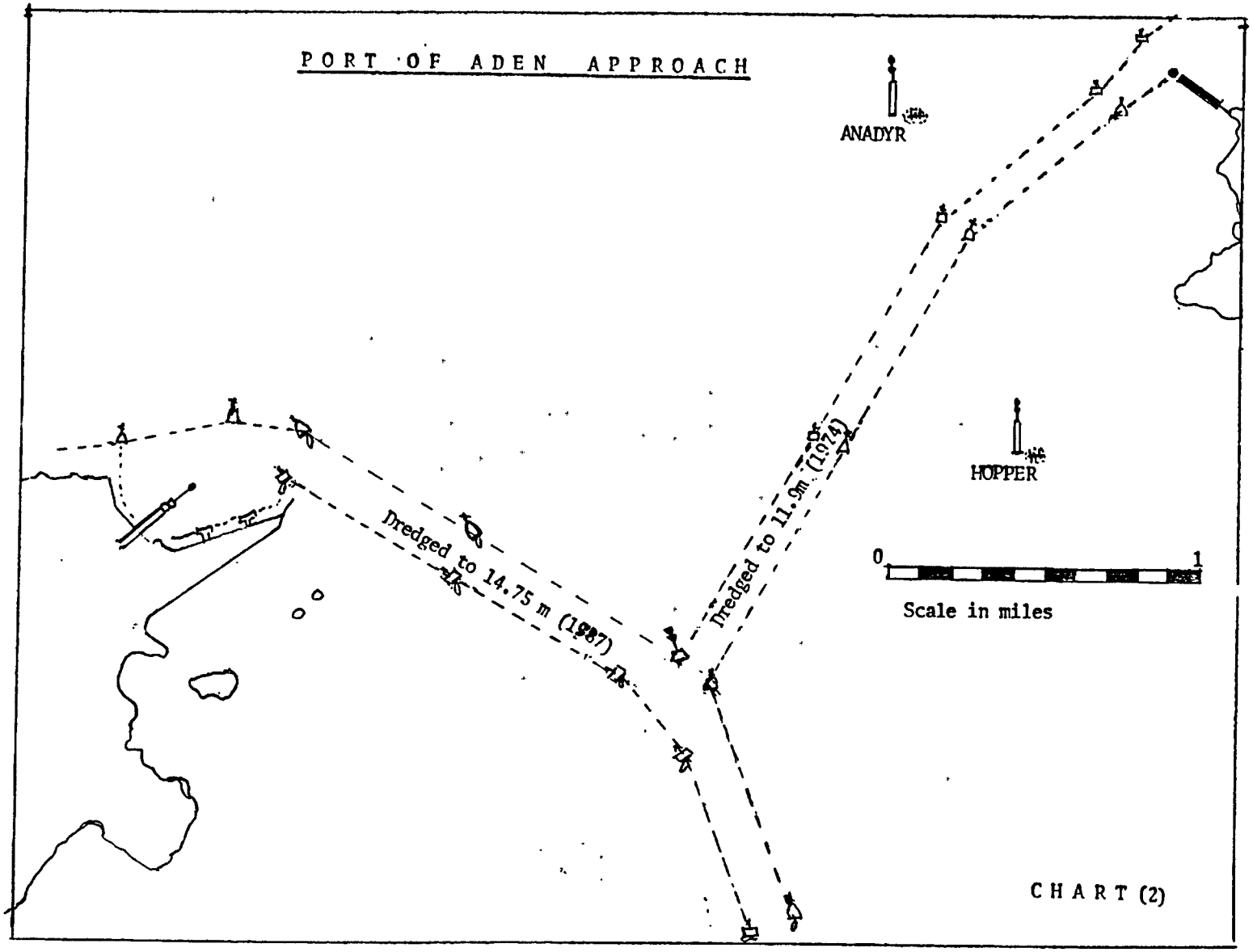
The Port of Aden is situated in a natural protected area where it is surrounded in three directions by land and mountains, and from south west by breakwater constructions which protect it from heavy swell during the south west monsoon.

The Approach consists of a main entrance channel of 0.7 miles long , 200 meters wide and 14.75 meters depth (dredged in 1987, see chart No.2 It is subdivided into two channels giving access to:

- The Oil Harbour at Little Aden, with a channel length of 1.2 miles, width 200 meters and depth of 14.75 meters.
- The Inner Harbour at Tawahi with, a channel length of 2.7 miles, width 183 meters, and depth of 11.9 meters.

These channels are marked on both sides by light buoys.

A wreck "Hopper" with a charted depth of 1.2


PORT OF ADEN APPROACH
ANADYR
HOPPER
Dredged to 14.75 m (1987)
Dredged to 11.9m (1974)
0
1
Scale in miles
CHART (2)

meters lies 0.7 miles SW'ly of Ra's Tarshayn and is marked by a light buoy.

A wreck "Anadyr" with a charted depth of 3.4 meters lies 1.1 mile NW'ly of Ra's Tarshayn and is marked by a light buoy.

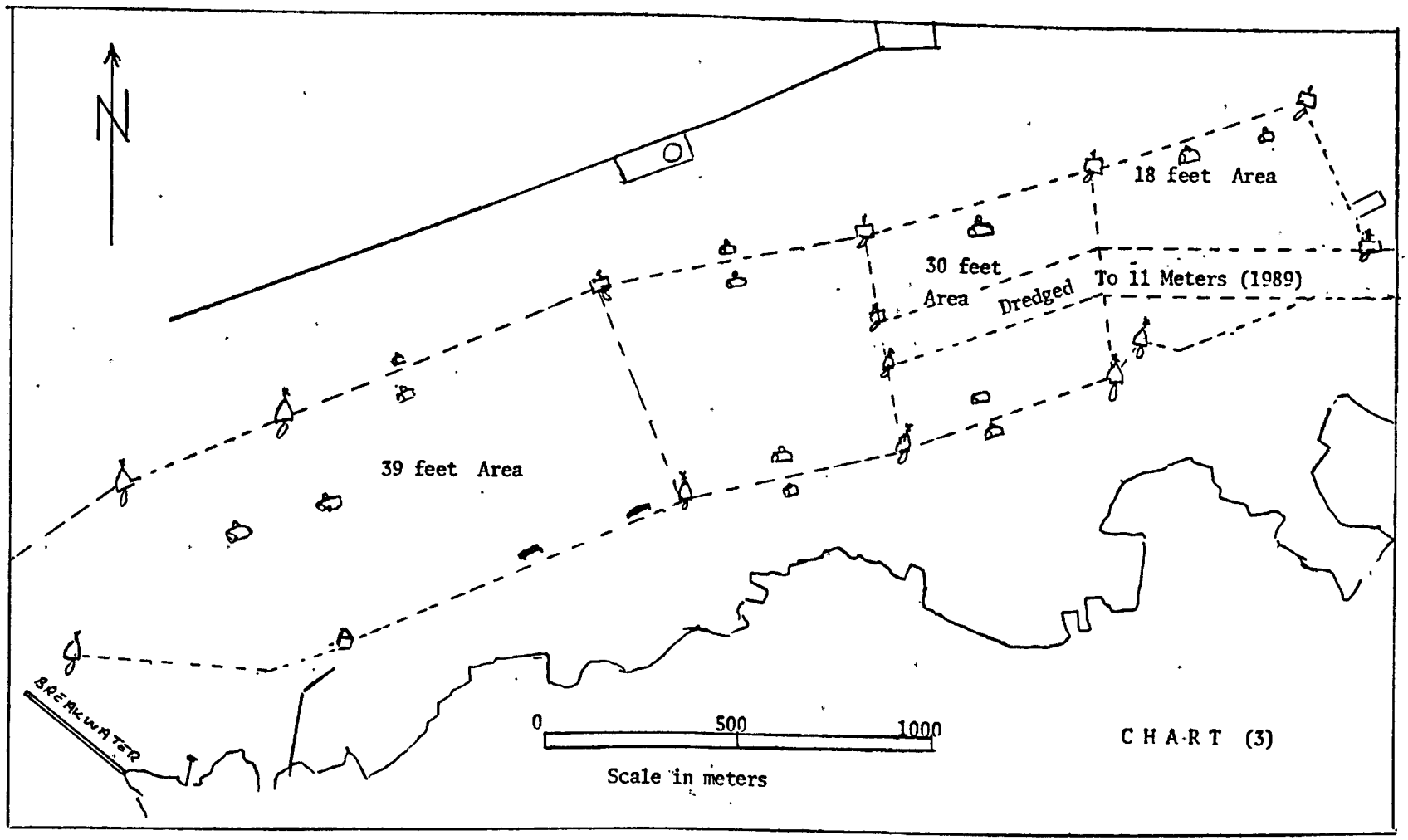
Aden Harbour consists of two parts namely the Inner Harbour at Tawahi (see chart No.3)and the Home Trade Quay (H.T.Q.) at Maalla connected with each other by a channel of 125 meters width and 11 meters depth (see chart No.4).

The Inner Harbour has 28 mooring buoys and dolphin berths including seven berths provided with bunkering facilities located in the south part of the Harbour. In addition to bunkering, loading and discharging takes place from and to barges in two stages to reach to and from the shore. The Inner Harbour berthing is divided into four areas according to water depths (see chart NO.3):

- The 39-feet depth area extends 2100 meters from the breakwater to the east. The maximum length of a ship that can be berthed at the dolphins is 275 meters.

- The 30-feet depth area extends 570 meters east of the 39-feet area. The depth varies from 29 feet at the north part to 27 feet at the south part of the area. The maximum length of a ship that can be berthed at the buoys in that area is 168 meters.

INNER HARBOUR



- The 18-feet depth area extends 600 meters east of the 30-feet depth area and is used for berthing small coasters and fishing vessels.

The Home Trade Quay (H.T.Q.) details in 3.1.4.1

3.1.2 Ships and cargo statistics of the Inner Harbour

The following table shows the ships, cargo, and bunkering traffic for the last five years:

Year	No.of ships	Total bunker (Tons)	Dry Cargo Imported (Tons)	Dry Cargo Exported (Tons)
1985	1801	493917	846468	53435
1986	1687	588499	656970	39979
1987	1802	596362	640740	37331
1988	1770	666469	742525	30621
1989	1604	446690	724024	48045

Source: Yemen Port Authority statistics

The above statistics show that the number of ships berthing at the Inner Harbour between 1985 and 1989 decreased considerably. This is mainly caused by outmoded cargo handling except on 1986 which was as a result of the disturbances in Aden which occurred from 13th January of the same year.

3.1.3 Harbour Craft

The harbour crafts which assist in ship handling in the Inner Harbour are:

Tugs	5 (3 Voith Schneider Propeller water tractors and 2 conventional)
Pilot launches	3
Mooring boats	5

In addition to the above mentioned crafts there are other crafts carrying out other service tasks in the harbour:

1 Dredger for harbour dredging works
2 Hopper barges for dredged spoils
1 Floating crane (30 tons)
6 Small tugs for towing cargo barges and water barges
4 Motor boats for shifting cargo labourers from and to shore , to and from ships
3 Passenger boats for ships passengers and ships' crew from and to shore

3.1.4 Marine Staff in the Harbour

Port Officer	1
Harbour Master	1
Assistant Harbour Master	1
Pilots	13
Port Control Office Personnel	7
Shore Bosun	1

Tugmasters	25
Serangs (Ass. Tugmasters)	20
Tug Engine Operators	20
Tug Greasers	40
Pilot launch Helmsmen (Succanis)	15
Pilot launch Engine Drivers	15
Mooring Boats Helmsmen	20
Mooring Boats Engine Driver	20
Ratings (tugs + mooring boats)	155
Total	354

3.1.5 Port Regulations

- Pilotage is compulsory for all ships exceeding 100 tons net registered, entering or leaving the Inner Harbour or Oil Harbour
- Using tugs in berthing and unberthing is compulsory for all vessels and the number of tugs used as follows:

For ships of up to 10,000 GRT	1 tug
For ships of more than 10,000 GRT up to 20,000 GRT	2 tugs
For ships of more than 20,000 GRT and up to 45,000 GRT	3 tugs
For ships more than 45,000 GRT	4 tugs
Extra tugs can be used at the pilot's discretion	

- Vessels engaged in oil bunkering or loading or

discharging bulk in the port shall plug all scuppers in such a manner as to make them oil-tight and take any other precaution that may be necessary to prevent cargo or oil from being spilled out of the vessel to the waters of the port. Prior to bunkering or loading or discharging a certificate is signed by the master of the vessel that he is complying with the aforesaid precautions.

- No oil or water mixed with oil shall be discharged in or near the sea within the limits of the port.
- No ballast or waste or other substance likely to be detrimental to navigation or to pollute the waters of the port shall be allowed to be deposited in the sea or port waters.

3.1.6 Extension and development

.1 H.T.Q.(See chart No.4)

The H.T.Q., before 1989, was accommodating small coasters and vessels up to a maximum length of 122 m and maximum draft 5.5 m. That was due to its limited length (250m), manoeuvring basin (150m width) and depth. A large comprehensive project for extension and modernization the H.T.Q. had taken place in that area in the last two years so as to accommodate larger size and specialized vessel of up to 36,000 dwt. The project is almost completed and is consisting of the following:

- renovation and extension of the H.T.Q. westward

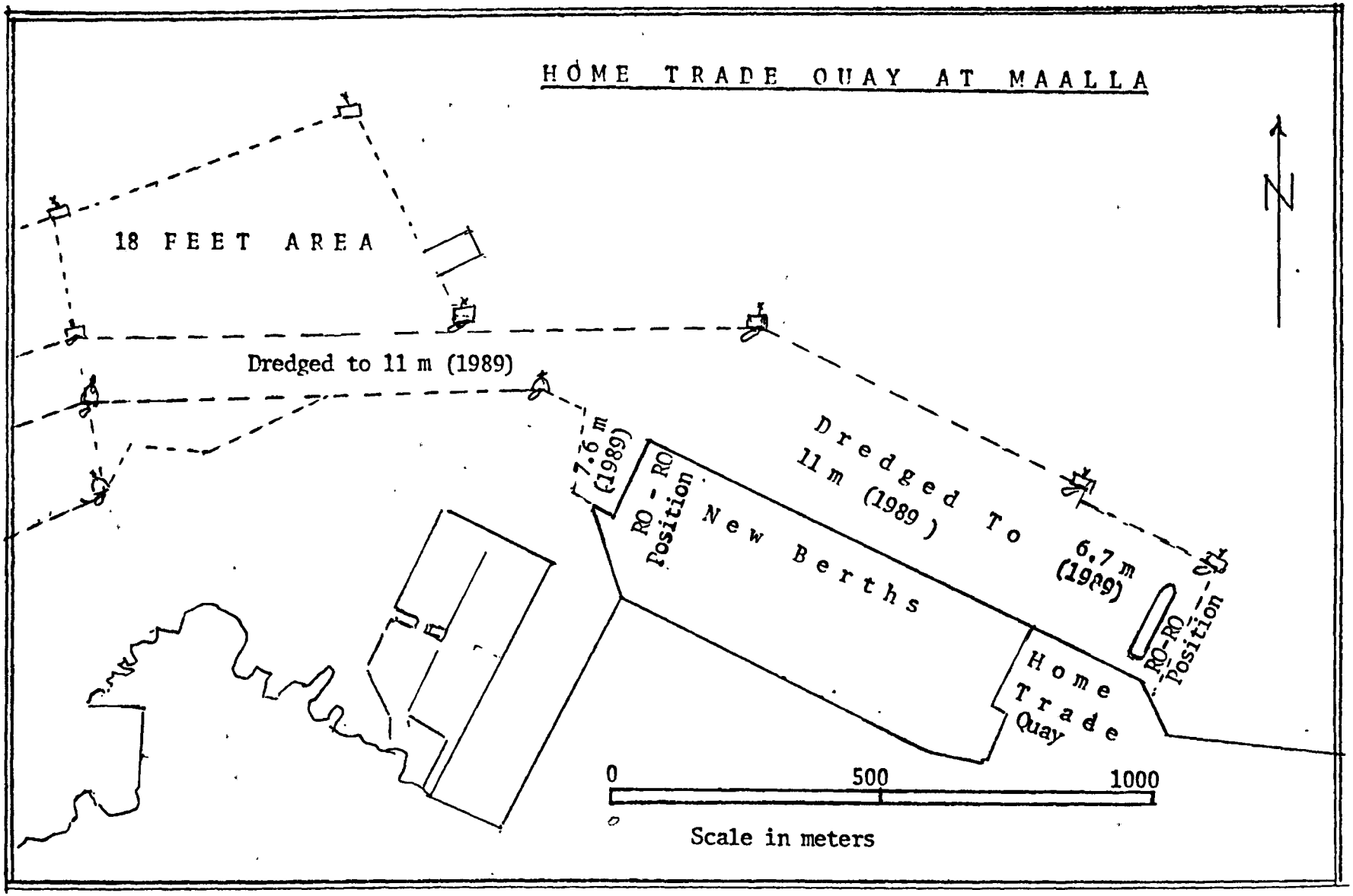

HOME TRADE QUAY AT MAALLA
18 FEET AREA
Dredged to 11 m (1989)
7.6 m (1989)
RO - RO Position
New Berths
Dredged To 11 m (1989)
6.7 m (1989)
RO-RO Position
Home Trade Quay
N
0
500
1000
Scale in meters

CHART (4)

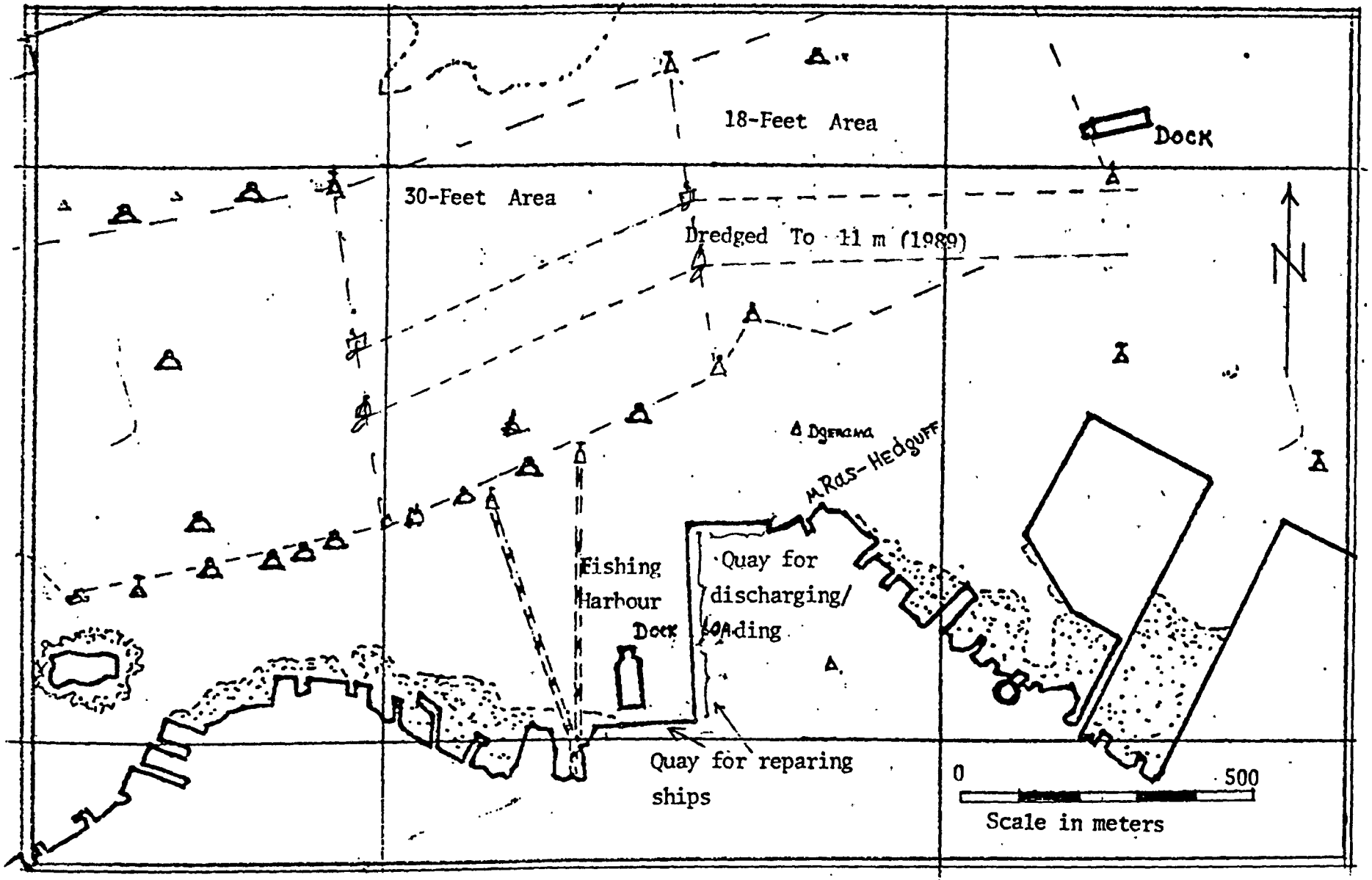
with an extra quay length of 750 meters.

- the area in front of the previous H.T.Q extended to 250 meters width, with a depth of 8.7 meters.
- the area in front of the new extended quay dredged to a depth of 11m with a width of 280 meters
- a berth for Ro-Ro ship of 150 meters length with a depth of 7.6 meters..
- dredged channel to a depth of 11 meters and width of 125 meters extending from the new berths westward passing the south part of 18-feet depth area and extending to the end of the 30-feet area replacing the previous Maalla Channel.
- extension of the reclaimed area behind the new four berths for cargo operation facilities such as open storage area, container freighter station grain silos.

Modern mooring boats and tugs such as Voith Schneider Propeller (VSP) water tractor are introduced in the harbour replacing some of the older harbour crafts.

.2 **Fishing Harbour** (See chart No. 5)

The Republic of Yemen has a long coastline rich in fish wealth. It extends from Bab Al-Mandab northward in the Red Sea to a distance of 300 miles and from Bab Al-Mandab eastward in the Gulf of Aden to a distance of 750 miles. After independence of the south part of Yemen from the British Colonization , the Government started to exploit this wealth by buying a number of fishing vessels.



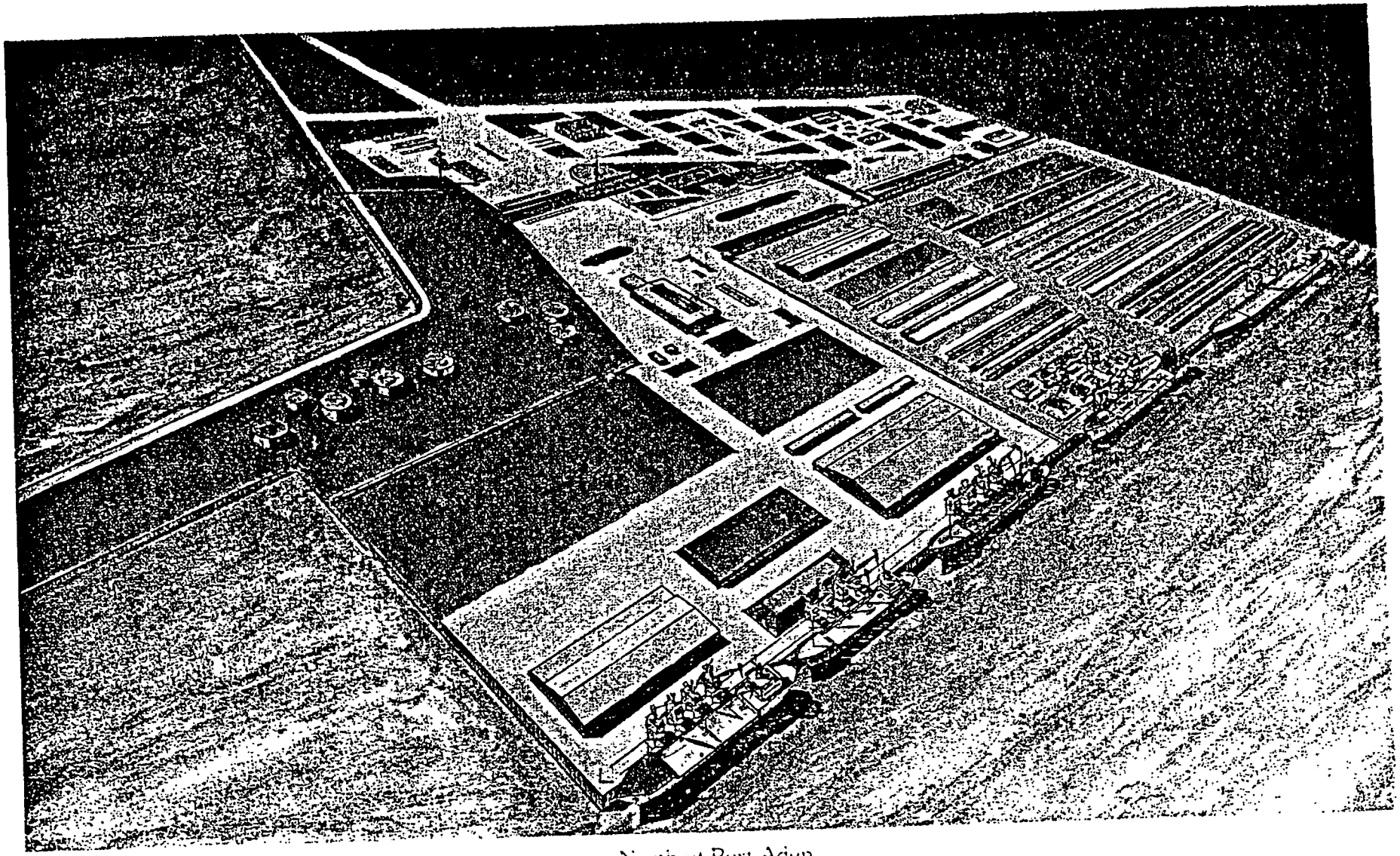
FISHING HARBOUR Chart (5)

Due to the expansion of the fishing industry in the south part of Yemen, it was found necessary to establish a convenient place for unloading the catch and receive necessary supplies, cold stores for keeping ready made products, and repair facilities. A fishing harbour would serve these purposes. The Government, with help of the Soviet Union designed and constructed the fishing harbour in the port of Aden. The project actually started in 1980 and was completed in 1986. It consists of:

(a) a quay of 554 meters length out of which 216 meters long assigned for ship's repair The remaining length of the quay is assigned for loading and discharging.
(c) a floating dock for repairs
(d) workshops for required equipments
(e) cold stores for storing the catch

2.1.7 Potential Future Development in the Harbour (see Fig.1)

The Port of Aden is suitable for extension and development, particularly on the north side of the harbour. There is a huge area in that part of the harbour which can be reclaimed for the construction of berths if further development is required in future. In 1982, a study was carried out by Russians Consultants in that area for container and Ro-Ro terminals. The project consists of a quay of 1083 meters in length with a depth of 12 meters alongside, to be equipped with gantry cranes ranging from 10 to 40 tons lifting capacity. In



North of Port Aden

THE POTENTIAL FUTURE DEVELOPMENT

Fig. 1

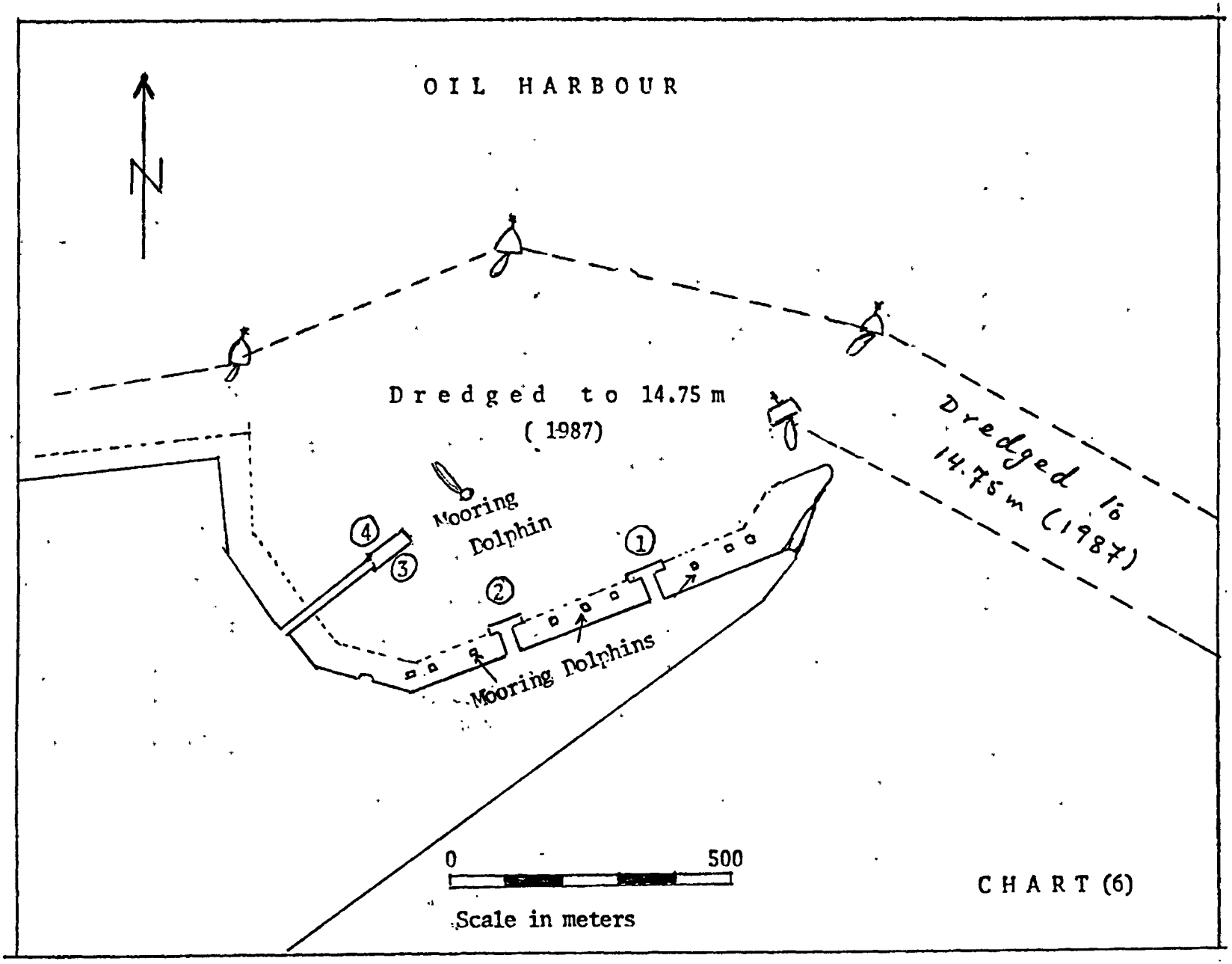
the back area of the berths a vast area is available to provide storage, including closed sheds.

At the moment this project is frozen as the Government is busy with the present project in the south part of the Harbour, and the project in the north needs a very substantial investment.

3.2 Little Aden Oil Harbour (see chart No.6)

The Oil Port which consists of four terminals and an oil Refinery is an extension of the port of Aden. This development was undertaken by the British Petroleum Company (B.P.) in 1952 after the nationalization of Abadan Refinery in Iran. The oil harbour was operated and administered by the British Petroleum Company, except for the pilotage service which was and still is under the YPA jurisdiction. At that time the harbour craft used to assist tankers in berthing and unberthing were two steam deep-sea tugs hired from the B.P. Clyde Company and manned by British tugmasters and chief engineers. The qualifications of the tugmasters were master mariners (F.G.) and the tug chief engineers were experienced 3rd and 2nd engineers from B.P. Tanker Company. The ratings were recruited locally and trained on the job. In 1975 the above-mentioned tugs were replaced by two diesel engine harbour tugs which belonged to the same company.

In 1972 B.P. proposed a replacement programme


OIL HARBOUR
N
Dredged to 14.75 m
(1987)
Dredged to
14.75 m (1987)
Mooring
Dolphin
4
3
2
1
Mooring Dolphins
0
500
Scale in meters
CHART (6)

to train the Arab nationals for all staff functions of the Refinery and the marine Department and to replace the expatriates. Three national cadets were sent for this purpose to the U.K. to obtain their 2nd mate certificate (F.G.) and become masters on board the tugs. The engineers were replaced by nationals from within the Refinery who had sufficient workshop training and had completed two years on the job training on board the tugs and had obtained the YPA licence as engine operator.

In 1st May, 1977, the B.P. Company handed over the Refinery to the Government in accordance with the 1954 agreement. From that time it became a state-owned company named "Aden Refinery Company (ARC)", under the Ministry of Minerals and Energy. The Government had difficulties in obtaining highly qualified nationals for operating the tugs to replace the expatriates. This was then solved by choosing nationals from the Navy who had sufficient experience in handling the small crafts and this continued onward until today. Beside them there are also tugmasters who graduated from nautical institutes in the USSR.

The Oil Harbour terminals are protected from the south by a breakwater 5.5 cables in length. The terminals are operated by the marine section of ARC

The terminals were previously capable of accommodating tankers up to 65000 tons dwt. They have been renovated and expanded to accept tankers

of larger size and deeper draft. Presently three of these terminals have depths of 11.5 meters alongside and can accommodate tankers up to 85,000 dwt while the fourth terminal, at a depth of 14.75 meters, is capable of accommodating tankers up to 110,000 dwt. The turning basin has been expanded and dredged to 14.75 meters.

An additional berth no.5 is under construction with length of 100 meters and 9.5 meters depth with a possibility of extending the berth up to 200 meters. The berth will accommodate general cargo and Ro-Ro ships up to 15,000 tons dwt. It will be in use for loading packed petroleum products.

In 1985 the ARC replaced the old tugs by two modern Voith Schneider water tractors with horse power of 3200 each and two modern mooring boats. The ratings on board the tugs and the mooring boats are trained on the job.

The Harbour's function is to receive crude oil in bulk for the oil Refinery, and to export refined and packed petroleum products.

3.2.1 Ships and Cargo Statistics at the Oil Harbour

Year	No. of ships	Crude Oil Imported (tons)	Refined Oil Exported (tons)
1985	120	3378183	2500157
1986	50	2234125	1367029
1987	90	2478304	1309625
1988	130	2773905	1567393
1989	150	2896695	2057923

Source: Yemen Port Authority Statistics

The above statistics show that the number of ships fell sharply in 1986. This was because of the disturbances in Aden which took place from 13th January of the same year. The number of ships again increased remarkably as a result of the new development in the terminals and its equipment.

3.2.2 Harbour Craft

Tugs	2 Voith Schneider Propeller water tractor plus
	1 Conventional
Mooring boats	2
Motor launch for combating pollution	1

3.2.3 Marine Personnel

Assistant Harbour Master	1
Marine Superintendent	1
Tugmasters	9
Serangs (Ass. tugmasters)	8
Tug Engine operator	8
Greasers	8
Tug ratings	32
Mooring boat helmsmen	8
Mooring boat ratings	16
Total	91

It is worth mentioning that the personnel on board the harbour craft in the Oil Harbour are fixed in their ranks, i.e. there is no chance for the lower ranks to be promoted through all time of their career to reach the level of tugmaster. This is contrary to the system in the Inner harbour, where there are good opportunities for crew members of the small harbour craft to be promoted until reaching the level of tugmaster.

3.2.4 Port Regulations

- The number of tugs used in assisting the ships is the same as applied in the Inner Harbour and mentioned in 3.1.3 .
- Ballast regulations in the Oil Harbour is the same as applied in Inner Harbour and mentioned in 3.1.3

- All ships berthed in the Oil Harbour shall provide steel wire hawsers of adequate size and at least 50 fathoms (91.5 meters) in length, one at each end of the vessel, and so stopped over the side that, in the case of emergency, a tug can pick up the end of the wire and tow the vessel out of her berth.
- No cargo shall be loaded into or discharged from any ship unless all sea suction and discharge valves of such ships connected with the cargo system are securely shut and discharge and other lines not in use are blanked off.

3.3 Port of Mukalla (See chart No.7)

This is a secondary port in the Republic of Yemen and is situated at a distance of about 300 miles to the east of Aden to serve Hadramout and the adjoining governorates. It is an open port without protection from the south west monsoon. There is a quay constructed in 1965 for small wooden vessels and small coasters (1).

The port of Mukalla was operated under supervision of Customs Department of the region until 1975, when it became a part of the Yemen Port Authority (YPA)-Aden and harbour operations were updated by using steel barges and mobile cranes brought from Aden.

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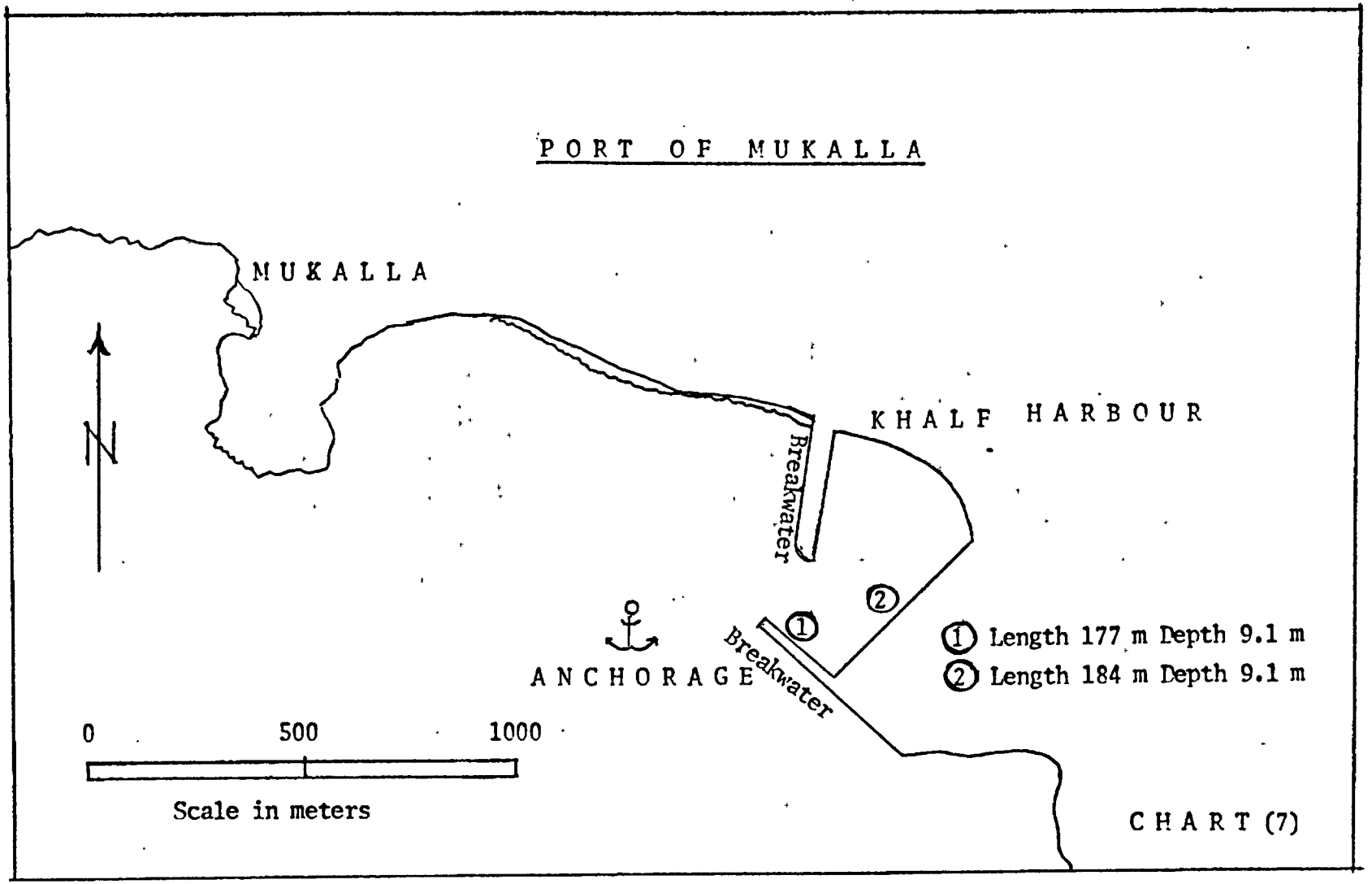
(1) Abdul Moti Hassan Mohammed. Maritime Administration. Thesis of 1988, WMU, P. 31 & 32


PORT OF MUKALLA
MUKALLA
N
KHALF HARBOUR
Breakwater
ANCHORAGE
Breakwater
1
2
1 Length 177 m Depth 9.1 m
2 Length 184 m Depth 9.1 m
0
500
1000
Scale in meters
CHART (7)

In order to accomplish and promote the economic and social goals at Hadramout and the nearby governorates, the YPA constructed the Khalf Harbour at a distance of about 1.5 miles SE from Mukalla Harbour. The project commenced early in 1977 and was completed in 1985 by constructing two commercial quays, one of them 177 meters and the other 184 meters long with a depth alongside it 9.15 meters, to accommodate vessels with maximum overall length of 145 meters and maximum draft 8.5 meters. A quay of 160 meters long for fishing vessels with drafts up to 4.5 meters and a turning basin of 10 meters depth was also provided for. These developments make it possible to discharge and load cargo directly from ship to shore by using modern equipments for handling cargo.

A modern tug is available (Voith Schneider propeller water tractor) and two mooring boats. The harbour personnel consist of the assistant harbour master who also functions as the pilot. The personnel on board the harbour crafts are trained "on-the job" but their qualifications are limited.

3.3.1 Ships and cargo Statistics at Mukalla

year	No. of ships	Cargo imported (Tons)	cargo exported (Tons)	refined oil imported (Tons)
1985	232	220630	6537	94213
1986	214	216675	6317	88302
1987	196	235904	4673	89594
1988	228	351221	7016	118147
1989	192	290233	21749	99390

Source: Yemen Port Authority Statistics

The above statistics show that the number of ships coming to the port of Mukalla in the last years fluctuates. There is no clear explanation for the fluctuations.

3.3.2 Harbour Craft:

Tugs	1
Pilot Launches	1
Mooring boats	1

3.3.3 Marine Staff in the Harbour:

Assistant Harbour Master / Pilot	1
Port Control Office Personnel	1
Tugmasters	1
Serangs (Ass. Tugmasters)	1
Tug Engine operator	1
Greasers	2

Pilot Launch Helmsman	1
Pilot Launch Engine driver	1
Mooring boat helmsman and Engine driver	1
Ratings (tug + mooring boat + pilot luanch)	9
	19

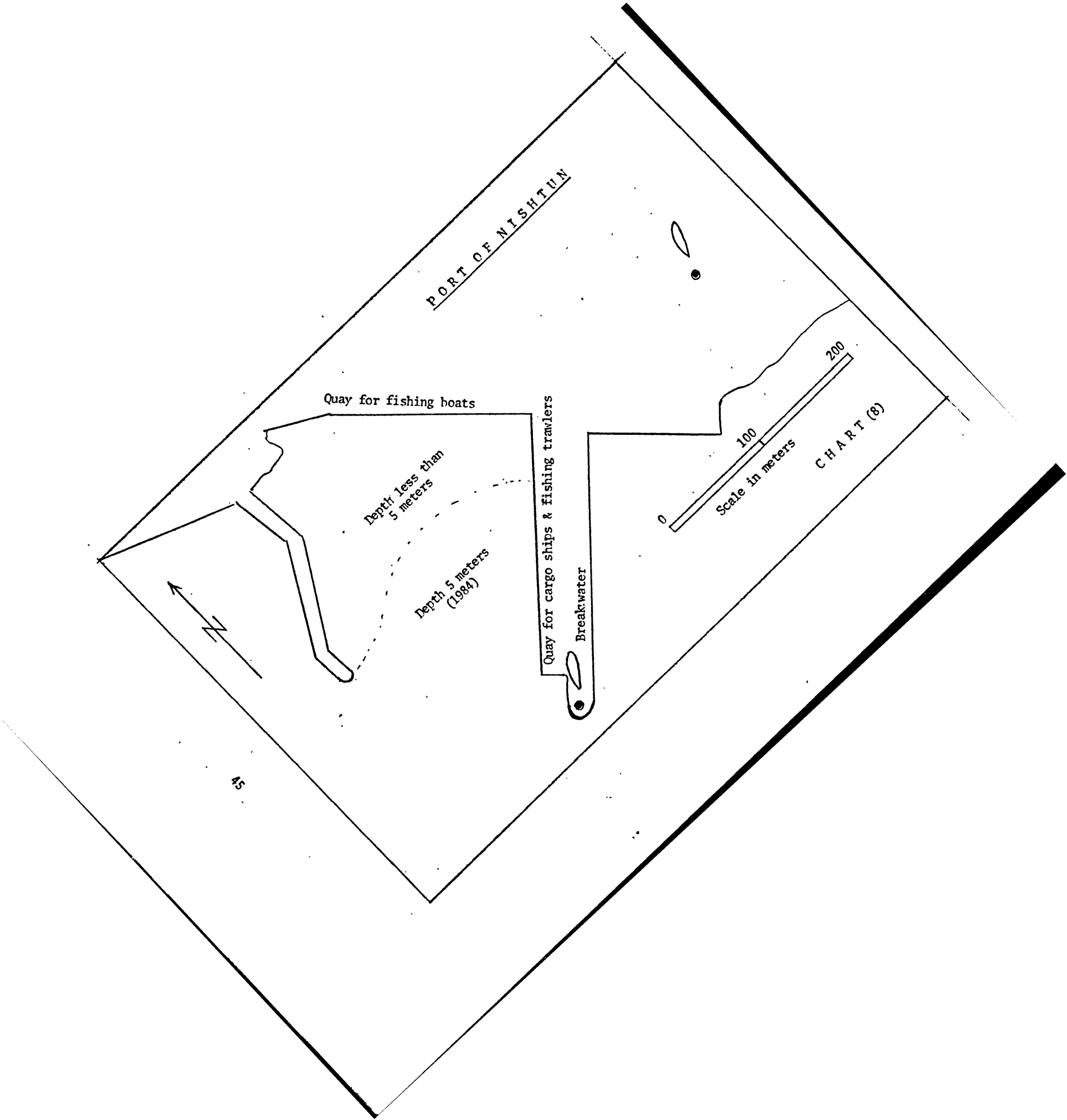
3.3.4 Port Regulations

The same regulations mentioned in 3.1.3 are applied here.

3.4 Port of Nishtun (See chart No.8):

It is a secondary commercial and fishing port which serves the Al-Mahra governorate. It came into operation in April 1984. It is situated 230 miles east of Mukalla and consists of a commercial quay of 210 meters long mainly used by cargo ships and fishing trawlers. Depths alongside the quay vary from 6.5 meters at the entrance to 1.5 meters at the inner end. The maximum length of ships to be berthed is 90 meters with maximum draft of 5.5 meters. Another quay of 140 meters is used for small fishing boats. No harbour craft are presently available, such as tugs for handling vessels or pilot boats or mooring boats. It is intended however to introduce a multi-purpose tug.

The only qualified marine personnel is the assistant harbour master, who at the same time, is the pilot. He is sent from the port of Aden for a tour of duty of six months and is then replaced


PORT OF NISHTUN
Quay for fishing boats
Depth less than
5 meters
Depth 5 meters
(1984)
Quay for cargo ships & fishing trawlers
Break:water
N
45
0
100
200
Scale in meters
CHART (8)

3.4.1 Ships and Cargo Statistics at Nishtun Port:

Table 1:

Year	No.of ships	Cargo Imported (Tons)	Cargo Exported (Tons)	Refined Oil imported (Tons)
1985	71	24227	1854	10830
1986	32	6100	823	12082
1987	44	7912	4013	8574
1988	45	7597	1373	6212
1989	19	2200	1326	6398

Source: Yemen Port Authority Statistics

Table 2:

Wooden vessel (Dhows) and Cargo statistics at Port of Nishtun

Year	No.of W. vessels	Cargo Imported (Tons)	Cargo Exported (Tons)
1985	78	6881	-
1986	47	7238	3
1987	63	7393	203
1988	108	17372	12
1989	118	21470	4

Source: Yemen Port Authority Statistics

The above statistics show that the number of ships

dropped down in 1986 due to the effect of the disturbances in Aden from 13th January of the same year. Table 1shows that the number of ships is still going down while the number of dhows in Table 2 is considerably increasing.. The reason is that the Port of Nishtun actually depends largely on the dhows which are coming from the neighbouring countries in the Arabian Gulf. This is because of the presence of a large number of Yemeni emigrants and merchants in those countries who transport their cargoes and personal luggage onboard those dhows with lower freight routes than the other ships.

3.4.2 Harbour Craft

Nil

3.4.3 Marine Personnel

Assistant Harbour Master . 1

3.4.4 Port Regulations

The same regulations mentioned in 3.1.3 are applied here.

3.5 Potential Single Point Mooring:

15th April 1987 was an important day in the south part of Yemen. On that day the Government announced the exploration of oil in the Republic with commercial quantities discovered inland at the governorate of Shabwa. Since then the Government is increasing its efforts in drilling more wells, hoping that the production of oil would help in the growth of the Yemen's economic and social projects. Extending the pipes from the oil fields to the coast at Bir Ali has already started and is expected to be completed and to start operation at the end of this year,1990.

According to the information from the officials at the marine department in the YPA, it is not clear up to now what system will be followed for berthing ships in Bir Ali for loading oil as there is no sign of constructing any jetties in that area for that purpose . It is most probable that a Single Point Mooring (S.P.M.) system might be adopted . A large single mooring buoy has already been brought to Port of Aden for this purpose .

3.6 Importance of Recent Developments to Maritime Port Personnel:

As previously mentioned that developments have taken place in the Inner Harbour, Oil Harbour and the other secondary ports and new modern harbour craft have been bought for the purpose of assisting ships in berthing and unberthing in these harbours. So far no steps have been taken to upgrade the

marine personnel on board such harbour craft and raise their level in nautical knowledge. Upgrading the level of skills for such personnel is now considered to be essential and should be implemented in order to catch up with the purchase and use of highly manoeuvrable harbour craft.

The developments in Aden harbour enabling modern, specialized ships to be handled will lead to more activity and ships' movement in the harbour. Very large ships with deep draft are expected to use the port. Handling such ships needs skilled and trained marine personnel.

The increased activity of the ships movement in the harbours will raise the chance of spillage of oil in the waters, which would cause pollution and damage to the marine environment. It is necessary to train the marine personnel in the harbour on combatting oil pollution. The same can be utilized for training the personnel on board the national fleet for preventing pollution from ships.

Additionally, safety of the harbours structures, harbours crafts, and ships from fire incidents is one of the important matters to be considered. To prevent or reduce catastrophic effects from such incidents to in the harbours, it is necessary to train marine harbour personnel on fire prevention and fire fighting. The same type of training can be utilized for the marine personnel on board the national fleet, for the safety of the national ships.

3.7 Potential Future Demand

.1 Large Tankers

The development and expansion of the Oil Harbour berths for accommodating tankers of up to 110,000 dwt will increase the number of large tankers using the harbour area. In special cases larger tankers (147,000 dwt) have been permitted to enter the Oil Harbour (at the end of last year and at the beginning of this year). Moreover, the exploration of oil in the Republic of Yemen and the extension of the oil pipes from the oil fields to an off-shore loading stations is expected to increase the activity, and larger tankers are expected to come to the area. These larger tankers need skilled personnel to handle them and mooring gangs trained in handling the ropes and wires efficiently and safely.

.2 Large Container Vessels

The construction of specialized berths in the Inner Harbour provided with modern facilities will lead to the augmentation of ships' movements in the harbour. Subsequently, containerization activities in the port expected to increase. There is a tendency in the Port of Aden, as in all ports world-wide, to move from a general cargo to a unitized and containerized cargo. This was stated by the Consulting Engineer " Coode and Partner " in their study at the Port of Aden in May, 1982 , when they said " It is estimated that 30% of goods presently imported are

containerizable and experience in other ports shows that an ever increasing percentage of cargo is being containerised as a new method of stowing goods in containers are developed". The Containerization in the port is expected to expand quickly and larger sizes and newer generations of container ships may be expected to use the port. The same consultants predicted that quick development will take place : " Although the development of containerizaion will not come about immediately, experience has shown that once the facilities are available development can be very rapid indeed ".

The following table illustrates how,even without proper handling facilities, the container traffic has slowly grown over last six years.

Year	No.of containers discharged
1984	1623
1985	2430
*1986	1884
1987	2084
1988	2736
1989	3667

Source: Yemen Port Authority Statics.

* In this year the number of containers fell sharply because of the disturbances in Aden which took place from 13th January of the same year.

.3 Ro-Ro Ships

Similar consideration apply to Ro-Ro vessels when facilities are made available for such vessels.

So, in future the port of Aden will observe a growth of larger size activities which need skilled and trained marine personnel for handling such ships and their cargo efficiently and safely.

CHAPTER FOUR

Examination of Port Conditions and Operating Practices

The efficiency and safety of maritime traffic in a port depends upon:

- Environmental conditions
- The berthing system
- Qualification of pilots
- Type and efficiency of the harbour craft
- Presence of qualified marine personnel on the harbour craft
- Safety systems in force

In the previous chapters, the qualifications and the level of the marine personnel in the harbour and the number and types of tugs available in the Port have been clarified. In this chapter an analysis is given of the efficiency and safety of the maritime traffic in the ports.

4.1 Environmental Conditions in the Port of Aden Area

4.1.1 Wind:

.1 The NE Monsoon occurs from November to January. During this period a weak sea breeze occurs from noon to about 1700 hours. Then a land breeze sets in, sometimes with gusts of force 4 to 6 Beaufort scale.

.2 SW Monsoon: During this season, from May to August, hot sandy winds prevail on the Aden Peninsula. A sea breeze blows into the port from south or south east, a land breeze may set in suddenly at about 1700 hours, as found during the NE monsoon.

A dry northerly wind occasionally blows in Gulf of Aden during SW monsoon without any warning. It only blows violently about three or four times a year. Usually the monsoon fails and the wind comes suddenly with great violence from between NW and NE, raising clouds of sand, with much lightning. The wind usually continues for three or four hours and occasionally comes on again from the east.

Towards the end of the SW monsoon, squalls from the north pass near Aden. They carry no sand but dark coloured clouds and are not as violent as at the beginning of the monsoon.

4.1.2 Visibility:

Sand storms occur from about May to August. They come from a northern direction, about sunset, and blow very hard occasionally until about 2200 hours. Visibility then is very low. Little warning is given of the approach of these squalls, except for a dense cloud of sand, banking up from the North one or two hours before sunset.

A calm occurs about two hours after the

beginning of the storm , and after a short time the wind comes from the south with great force for another two hours or so, when the sand clears and the wind lessens.

4.1.3 Tidal Currents

On the rising tide , during both monsoons, the tidal stream sets strongly NE past the break-water until it is checked by the bank on the north side of the harbour and by the rubble mound.

On the falling tide the stream curves west by Jerama Beacon (1/4 cable north of Ra's Hedjuff) and then flows along the side of the harbour, trending more to the south after passing Ra's Marbat.

The estimated average maximum rate at spring tide is 1 1/4 knots, but it varies depending on the strength and direction of the monsoon.

4.2 Existing Berthing System in the Port of Aden

Berthing in the port of Aden is carried out by the following ways:

4.2.1 At H.T.Q.:

- alongside the Quay. Fig. 2
- in a Ro-Ro position with headlines to the Quay and the starboard anchor out, with the stern made fast to a mooring buoy. Fig. 2
- or four headlines to a mooring buoy and the port

Fig. 2

Fig. 4

Fig. 6

Fig. 3

Fig. 5

Fig. 7

anchor out, with stern lines to the Quay. Fig. 3

4.2.2 At the Inner Harbour:

- between two mooring buoys Fig. 4
- one or two anchors and a stern mooring buoy. Fig. 5
- one anchor, head mooring buoy and two stern mooring buoys. Fig. 6
- alongside a dolphin with one anchor, head lines and stern lines to mooring buoys and spring to dolphin. Fig. 7

All the berths of the Inner Harbour are tidal i.e. on the ebb tide the ship's heading after berthing is in the same direction as when she entered. on the flood tide the ship is swung round to point to the entrance of the harbour at the end of the manoeuvre.

4.2.3 At the Oil Harbour:

- alongside berths. Berths no.1 and no.2, each consists of two parts: a T-shape berth jetty for a tanker to be moored alongside where the spring lines are fasted and the other part is mooring dolphins for fasting the head lines, stern lines, and breast lines by using mooring boats. (See chart no. 6)
  Berths no.3 and no.4 are on either side of a pier which projects 280 meters NE'ly and a mooring dolphin for fasting the stern lines. (see chart no.6)

4.3 Berthing Practices and Problems in the Port of Aden

4.3.1 Inner Harbour

.1 Communication

During berthing communication is a most important link between the pilot on board ship and the tugmaster, which is vital to the efficient handling of a ship. The means of communication widely used between the tugs and the pilots on board the ship is through sound signals. Radio communication is nearly absent. This stems from the berthing practices before 1883, when the pilots in the port were non-Yemeni . Because of language problems the sole communication between pilots and tugs were sound signals and this procedure still exists up to now. After 1983, when the national pilots replaced the foreign pilots, radio communication were gradually used as there was no language barrier between the pilots and the mariners on board the tugs. This was also encouraged by the Port Authority. Unfortunately, there are still difficulties in the radio communication between ship and tug, due to the fact that:

- the tugmasters do not understand many nautical terms;
- standard procedures, such as repeating an order are not followed by tugmasters;
- the pilots are compelled to use local expressions (slang Arabic words), to explain

their orders. This takes more time than using correct nautical terms;
- the local expressions used by the pilots differs from one pilot to another.

So, despite the availability of radio communication, sound signals are still the dominant method of communication. The sound signals are given by ship's whistle when only one tug is used. If two tugs are required a mouth whistle is used for the other tug. The format of such signals used for manoeuvring between the pilots and the tugmasters is as follows:

Signals	**Meaning**
One blast	Push or pull to swing ship in a starboard turn. Fig.8a and 8b.
Two blasts	Push or pull to swing ship in a port turn. Fig 8a and 8b.
Three blasts	Pull the ship forward (if the tug is fast forward). or pull the ship aft (if the tug is fast aft).
Four blasts	Stop pushing or pulling.
Five blasts	Let go the tug line . If the signal is repeated, it means manoeuvring is finished.

At present the tugmasters and their assistants (serangs) have begun to use radio communications, but not using the full possibilities of radio, and not efficiently.

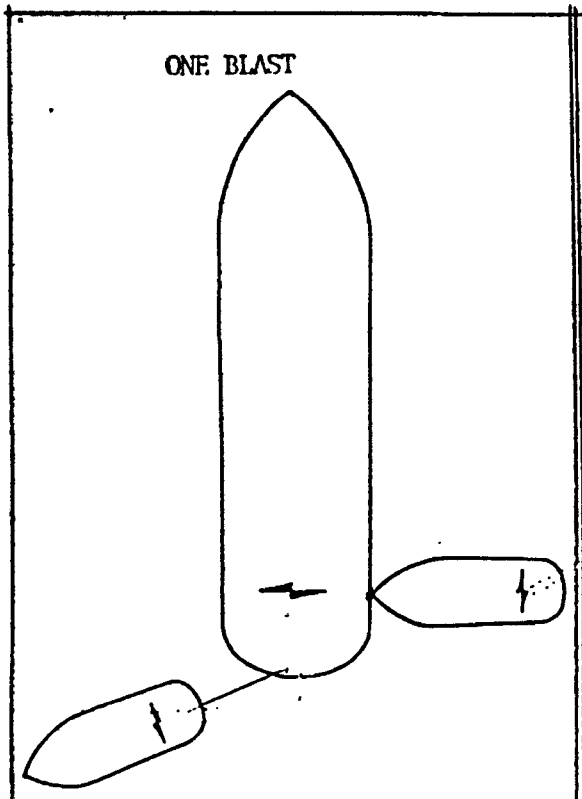


Fig. 8a

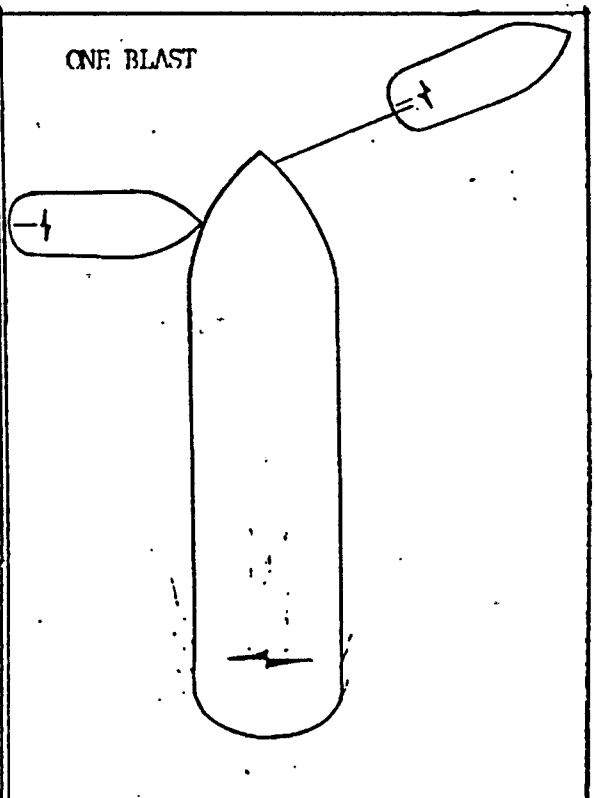


Fig. 8b

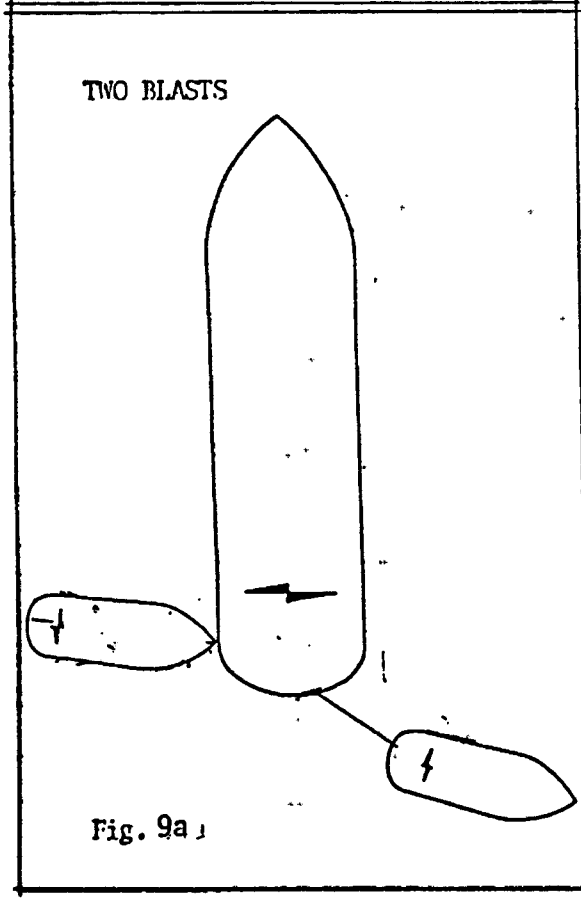


Fig. 9a

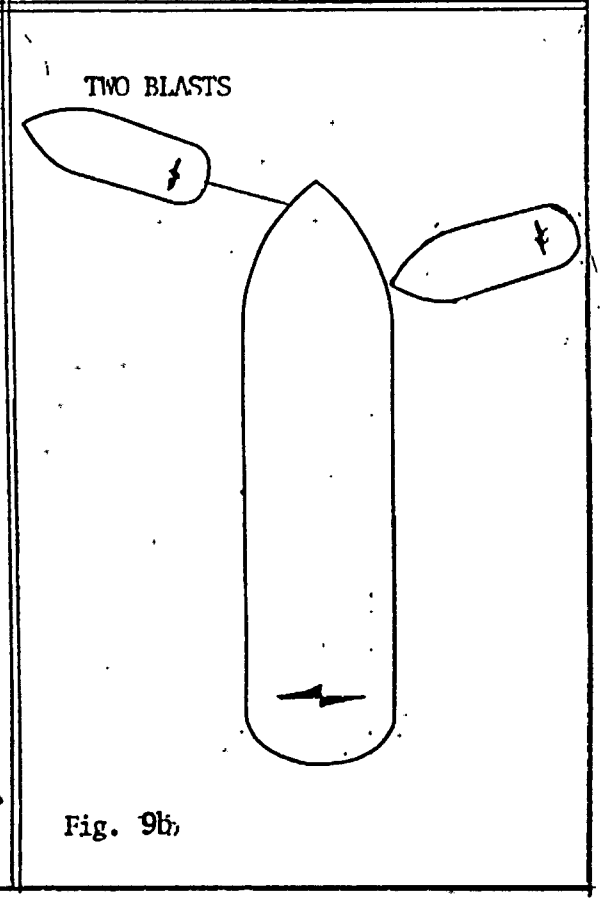


Fig. 9b

Ideally, the sound signals should only be used in cases of emergency, when there is an electric failure or when the radio communication is impossible for any reason. As the prime means of communication during manoeuvring nowadays, they are unsuitable.

As radio communication between the tugmasters and the pilots is an essential factor for efficient and safe handling of ships, the training the marine personnel on proper use of radio communication is imperative.

.2 Other disadvantages of sound signals

(a) If more than two tugs are used the third and eventually fourth tug cannot be communicated with by sound signals

(b) The mouth whistle sometimes cannot be heard clearly by the tugmasters; particularly in large , high and wide ships where the pilot is standing on the other side of the ship. The pilot then has to go from one wing to the other to give signals to the tug and to control the fall of the ship to her berth.

(c) If there is a change in the berthing manoeuvres due to engine trouble or another reason, the sound signals cannot explain the situation to the tugmasters simultaneously.

.3 Tugs Manoeuvring

As mentioned previously the personnel on board the tugs have had no theoretical maritime training and they acquire their experience on board. Difficulties are more obvious when handling conventional tugs than when handling the Voith Schneider propeller water tractors, due to the limitations in manoeuvreability of conventional tugs. Some of the tugmasters, when approaching vessels for pushing, come in very hard and strike the ship with too much force. Others approach very slowly, not taking into consideration the effect of tide and wind and sometimes miss the target and spend much time going ahead and astern before coming to right position.

Identical difficulties happen when taking a rope from the ship at the buoyed berths. A long time may be spent before the tug manages to take a rope.

The use of VSP tugs lessens the problems to a certain extent, but handling such tugs to their full potential needs extensive theoretical knowledge of their properties. As an illustration of this, very few of the tugmasters can understand the sideway manoeuvring of such tugs.

Some tugmasters practice without a good sense of seamanship. For example, when taking a rope on the tug's hook from a ship , they take it out at a speed that results in the ship's crew being unable

to control the running out of the rope. This practice endangers the ship's crew and may cause a fouled propeller.

In many cases the tugmasters and their assistants are unable to read the draft of the ship, or the chart, and cannot compare the depths they are working in with tug's draft. They have no idea about compass errors or steering by compass, nor of the other equipment on board the tug such as the gyro compass, the echo sounder and the radar. They also have inadequate knowledge about taking sounding using the lead line, or the sounding of the tanks to determine the quantity of bunkers and water remaining on board. They lack knowledge about anchors and their use, about the axial thrust of the propeller and the effect of the right-handed and left-handed propellers on manoeuvring. There is also a great need for education in nautical English and communication procedures. They have inadequate knowledge of fire fighting and environmental protection procedures as well.

In order to bring such personnel handling tugs up to a suitable standard with a good knowledge of ship manoeuvring and port safety in general it is necessary to review the training of such personnel in order to provide them with a proper level of nautical knowledge.

.4 Pilot Launch and Mooring Boat Helmsmen

These personnel form the nucleus for the tugmasters of the future. Normally the helmsmen of the pilot launches are promoted to assistant tugmasters after a certain period of service and their positions are taken by the mooring boats helmsmen.

Presently the helmsman have no maritime education. They only acquire their experience on board. They have however inadequate knowledge of ship handling, the effect of right-hand and left-hand propeller and the effect of wind and current during manoeuvring.

Some practices from the mooring boats personnel when berthing ships at the buoyed berths are not correct. When they take ropes from ships to the mooring buoy , they operate at high speeds without paying attention to the state of the rope if it is slack or tight. Some of them do not put the ship's ropes on the shore bollard in the correct way.

The pilot boat and mooring boat of helmsmen should be given a proper maritime education in appropriate subjects because:

(a) they will be the future tugmasters;
(b) their level of education (elementary level) is higher than that of the present tugmasters and their assistants;

(c) they have the desire to learn

Further education of this group of maritime personnel will help in establishing a firm base of tugmasters for the future, provided with sufficient knowledge and understanding of seamanship and capable of operating the harbour craft safely and efficiently.

4.3.2 Little Aden Oil Harbour

The method of fastening the tugs to assist the tanker in berthing and unberthing in the Oil Harbour is different from that in the Inner Harbour.

(a) **Old system**: By fastening the tugs alongside the tanker with tug's lines. In this method the conventional tugs are used. Fig. 10

(b) **New system**: By fastening the tugs fore and aft the tanker. This system replaced the previous system and has been adopted since 1985, when the modern tugs were introduced in the Oil Harbour. Fig. 11

The old system is nearly obsolete and rarely used. In certain cases, when for instance one of the modern tugs is under repair or busy in a task of pulling barges of cargo (drums of asphalt) to the neighbouring ports such as Port of Djibouti; In this case the old system is again used by bringing in the stand-by conventional tug.

Nautical terms concerning manoeuvring are understood by the tugmasters of the Oil Harbour. Because of their regular use of radio communicatiosnn there is no communication problem. The sound signals are used there only in emergency cases, when there is trouble with the radio.

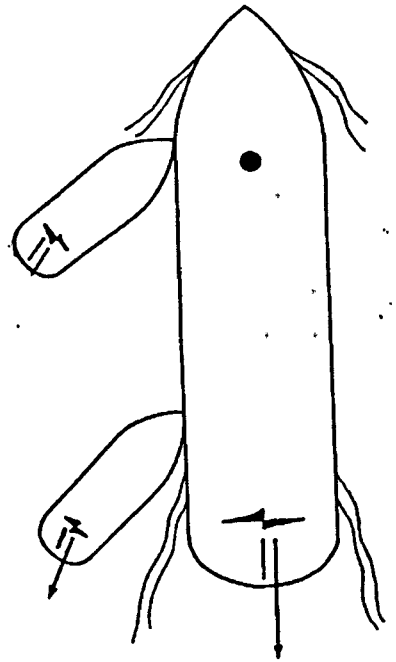


Fig. 10

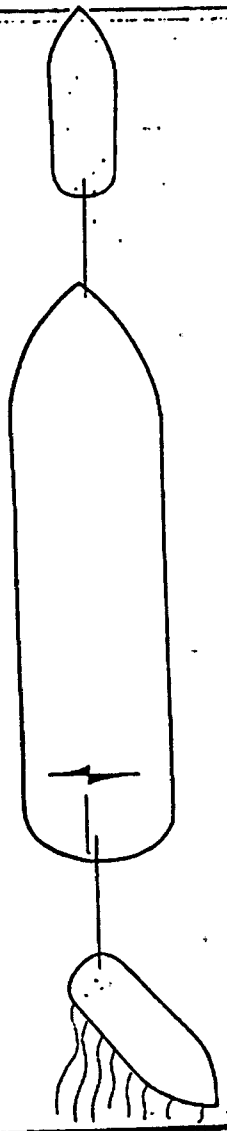


Fig. 11

It is worth mentioning that one third of the tugmasters in the Oil Harbour studied in nautical schools in the USSR, while the remaining two thirds acquired their experience through on the job training. There is, therefore, a need for maritime education, including concepts of forces and moments when manoeuvring with the Voith Schneider Propeller water tractors; for the oil harbour tugmasters.

The mooring boat personnel in the Oil Harbour have no sufficient educational level as is the case in the Inner Harbour. They just read and write due to joining classes of eradication of illiteracy within a campaign held by the government in the last few years, after independence. At present they have no nautical education and are only trained on board. Their abilities do not match the new developments in the harbour craft, particularly the helmsman, who works at the same time as engine driver in the modern boats. Training and education of such personnel needs to be seriously examined and proper personnel selected for training in future.

4.4 Other Activities of Harbour Personnel:

In certain cases it is necessary to send one of the tugs for a task of towing barges, to replace a tug in Mukalla, or send the dredger for dredging works in Mukalla or Nishtun. The command is in the hands of one of the pilots and the crew consists of ratings from the harbour craft.

As mentioned previously, the ratings have insufficient knowledge of compass directions, steering, fire fighting, survival at sea and lifeboat handling. The pilots have not been updated or refreshed with any courses concerning fire fighting, lifeboats and survival at sea since their graduation as master mariners. The situation on board a tug as a sea passage is therefore highly unsatisfactory.

4.5 Port Control Office Personnel

This office comes under the responsibility of the Harbour Master. By this office the movements of ships in the port are controlled throughout the twenty four hours. The function of the personnel working in such office is as follows:

- to receive the ships' calls (on arrival) for berthing and the same for ships inside the port for departure;
- to carry out the Harbour Master's orders and instructions concerning berthing and unberthing;
- to establish communication with the other maritime sectors in the port such as the agency, the wharf and operation department, port health and immigration for necessary procedures in berthing and unberthing;
- to control the ships' movements inside the port;
- to arrange pilots and harbour craft required for berthing and unberthing;
- to record the daily number of ships, their times of movement and their calls;

- to advise the ships on suitable places for anchorage and to inform them about any regulations, procedures and limitations in the port.

The majority of the port control personnel have a level of secondary education, but have no maritime knowledge. They only acquire their experience through on-the-job training. They lack knowledge and skills concerning:

- port regulations;
- nautical terms;
- pilotage knowledge;
- the buoyage system;
- rules of the road (International Collision Regulation);
- recording the positions of ships on the chart;
- radar operation (and theory of radar).

It is therefore necessary to upgrade such personnel to keep pace with new developments in the port. Therefore it is advisable for such personnel to attend some of the training and lectures which should be arranged for the pilots and tugmasters.

4.8 Maritime Personnel of the National Fleet(YNL & ARC)

The officers in on board the national fleet of the above companies are qualified and graduated from the Arab Academy in Sharjah. However, the remaining crew are employed on an ad hoc basis, without any basic nautical education, and some of them are illiterate. They have insufficient

knowledge or practical training on fire fighting, lifeboat handling, survival at sea and first aid which are considered to be mandatory requirements according to the IMO STCW 1978. Officers who obtained their certificates more than five years ago have not had these revalidated, nor have these officers attended an updating or refresher courses. (Summary of the marine personnel on board the national fleet in Appendix 2)

4.7 Fire Incidents and Fire Fighting

This is one of the serious problems to be looked at in the port of Aden which might cause a disaster due to the presence of inflammable goods in the harbour. There has not been any case of fire in the Oil Harbour so far. However, in the last years some incidents which have occurred in the Inner Harbour are:

D a t e	Name & type of ship	Place of F i r e
29.07.82	Tbilisi Trawler	Engine room
15.11.82	Union Hamburg	Cargo Barge alongside vessel
17.02.83	14 May Floating Factory	Bridge

06.02.86	Thalassini Avgi Cargo ship	Engine room
24.05.87	Ibn Majid Research Vessel	Bridge
20.02.89	Ilongo Livestock carrier	freezer room

Source: Marine Department - YPA

Normally when fire happens in Inner Harbour, the incident is controlled by the Port Officer and/or Harbour Master with the help of the pilots and the other marine personnel on board the harbour craft.

However, the marine personnel on board the harbour crafts have insufficient training for fire fighting Pilots also have not attended any refresher courses concerning fire fighting since they graduated.

4.8 Oil Pollution Incidents, Prevention and Combat

Oil pollution is one of the most important problems which occurs from time to time at the Inner Harbour and the H.T.Q., during bunkering and/or during loading and discharging or pumping out the bilges secretly at night. The following table shows the incidents which have taken place in the Inner Harbour and H.T.Q. in the last few years:

Oil Pollution in the Inner Harbour

D a t e	Number of incidents	Type of pollution and total quantity
1985/86	5	1 barrel Fuel Oil
1987/88	7	1.5 barrel Fuel Oil and Gas Oil
1989/90	8	2 barrels Gas Oil

Source: Marine Department - YPA

In addition to the above-mentioned incidents other incidents took place in the Oil Harbour during loading, discharging and deballasting. The following table illustrates the number of incidents these:

Oil Pollution in the Oil Harbour

year	No. of incidents	Total Quantity and type of pollution
1985	10	14 barrels fuel oil, gas oil and oily mixture
1986	3	4 barrels gas oil and kerosine
1987	4	46 barrels gas oil and oily mixture
1988	11	40 barrels crude oil

		fuel oil and lub. oil
1989	4	2 barrels crude oil fuel oil and oily mixture

Source: Assistant Harbour Master's Office
Little Aden.

According to port regulations, pollution is strictly forbidden and the marine police investigates each incident. The Government Law no.6 of 1980 concerning protection of the marine environment from pollution imposes very heavy fines against any vessel or any craft causing pollution.

In the Oil Harbour, the marine section of Aden Refinery has a motor launch provided with booms for spreading dispersants to combating oil pollution whenever an incident occurs. They have no floating booms for combatting the oil on the sea surface. In the Inner Harbour there are no means available for combatting oil pollution.

The harbour staff in the Oil Harbour and in the Inner Harbour lack a knowledge of pollution prevention, control and clean up, because there is no such training courses for upgrading them.

4.8 Port of Mukalla

The marine personnel on board the harbour craft in the Port of Mukalla, such as the tugs,

pilot launches and mooring boats have the same qualifications as the marine personnel in the Port of Aden. The level of their education is elementary and none of them have any maritime education. The communication between the pilots and the tugmasters is done by sound signals. Normally, the marine personnel are sent to the Port of Aden for on-the job training. After completing this training, they join harbour craft at Port of Mukalla.

Concerning fire fighting and oil pollution prevention at Mukalla, the situation is the same as for the Inner Harbour in Aden. Marine personnel are insufficiently trained for fire fighting, they lack training in combatting oil pollution. Means for combatting oil pollution are not available at Mukalla.

The need of training for marine personnel on such tasks in Mukalla is therefore clearly evident.

4.10 Port of Nishtun

As mentioned in Chapter Three, Nishtun has no harbour craft such as tugs, a proper pilot boat or mooring boats to assist ships in berthing and unberthing.

A service boat received in 1984 from the company which constructed the port was utilized as a pilot boat, although it was not suitable for that purpose. In June 1987 the boat was sent for a task outside the limit of the harbour, where it met

heavy weather and suffered a total loss. From that date on the harbour is without a pilot boat. The pilot uses either a fishing boat available in the harbour, or the lifeboat of the ship to be piloted.

The port is under the influence of the NE monsoon and SW monsoon. During the NE monsoon it very pleasant in the port except, for some days in December and January when heavy gusts of force more than 6 make it difficult for ships to unberth unless assisted by a tug. This weather lasts for periods of about 5 days.

In the SW monsoon the port encounters heavy weather i.e. strong sandy winds and heavy seas breaking over the breakwater. The swell inside the basin may cause the ropes of berthed ships to break.

Berthing is difficult without a tug in this weather, as strong winds push the ship away from the quay during berthing.

It is unsafe as well for the pilot to go to ships in such heavy weather and normally the pilot instructs ships through radio communication to enter the port. When they approach the berth the pilot is present on the quay and gives advice on berthing. When ships leave the port in such weather the same procedure is applied in reversed order.

Thus it is necessary to bring a tug, pilot boat and mooring boat for this port to assist in handling ships efficiently and safely. In view of the small

number of ships which visit this port, these facilities might be provided for by Aden.

Fresh water is very scarce and unavailable for ships in the area. There is a power station inside the port and its function is to generate electricity and to distill sea water to supply the port and the town around the port with electricity and fresh water. It is therefore absolutely necessary to keep the harbour and nearby sea water clean and unpolluted .

There are two large oil tanks inside the harbour for suppling the ships with bunkers, and the whole region with petrol for local consumption . The presence of these tanks and the power station inside the harbour needs great caution and suitable measure and regulations to control them. Port personnel should to be trained in fire prevention and fire fighting.

CHAPTER FIVE

Maritime Training, Education and Examination in the Republic of Yemen

5.1 Need for training

As explained previously that the developments which took place in the ports of the republic of Yemen will enable the berths to accommodate large modern specialized ships. Many of them have different layouts with varying features such as high freeboard and superstructures as in tankers, Ro-Ro ships, container ships, car carriers, and lash ships. Such ships are greatly affected by wind and current forces during manoeuvring due to their exposed area of hull and handling such ships needs skilled and trained marine personnel under different weather conditions ..

New types of cargo and methods of cargo handling will emphasize the need to train and educate port personnel to ensure efficiency and safe cargo handling. The demand for fire fighting, pollution prevention and environmental protection make a continuous programme of training, education and examination necessary.

Together with the modernization and the development of ships and the port, computerization of information will be introduced. Marine personnel therefore should be made familiar with

the function and use of the computers.

In order to follow new developments and to meet the requirements of safety and efficiency of maritime operations, it is necessary to train the following marine personnel:

- Mooring boat men and Pilot launch men
- Tugmasters and tug crews
- Pilots
- National fleet crew
- Other Marine Sector personnel

5.1.1 Mooring boat and Pilot launch men

As mentioned in chapter one, the level of nautical knowledge of the mooring boat men and the pilot launch men is insufficient. Their abilities depend entirely upon practical experience. They are in need of upgrading their nautical knowledge in order to cope with the existing situation and foreseen new developments in the harbour. In order to create a higher level of abilities for such marine personnel on board the harbour craft the following is suggested:

.1 The level of education of such personnel entering the profession should be at least a secondary education.

.2 The trainees should complete 12 months on the job training after which they have to join the Maritime Centre (MTC) for short course training. During this time (job training) they could attend evening classes in English.

.3 They should spend 6 weeks of the theoretical nautical course mentioned in 5.4.1
See also Fig.12

In addition, the trainees should attend the fire fighting, personal survival and first aid. (details of the courses in 5.4.9, 5.4.10, 5.4.11 respectively)

5.1.2 Tugmasters

Tugs play an important role in handling ships during manoeuvring in the harbour. The ability of the tugmaster in handling the harbour craft depends upon his experience and educational background. The tugmasters in our national ports as explained in the previous chapters do not have sufficient maritime educational background. In addition, 11 tugmasters in the Inner Harbour out of 26 tugmasters are to be retired at the beginning of 1991, and will be replaced by other new tugmasters. In order to provide for a higher level of such marine personnel in-charge of tugs in the long term and assist in safe and efficient shiphandling the following is proposed:

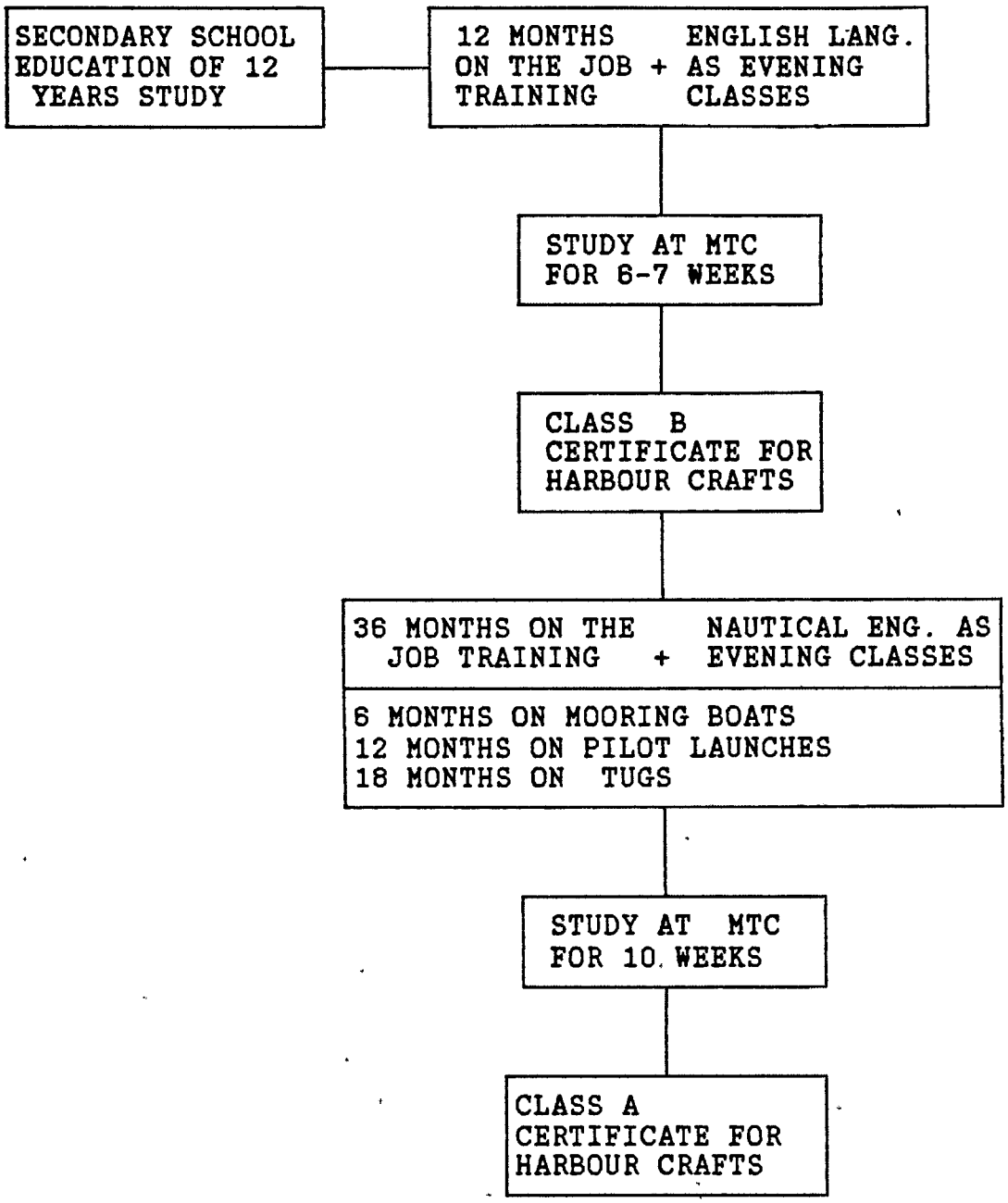
.1 The tugmaster should pass the first stage of the mooring boatmen and pilot launches men training course mentioned above in 5.1.1 .

.2 After that stage he should serve on board the harbour craft for not less than 36 months in the following manner:
- 6 months on board the mooring boats
- 12 months on board the pilot launches
- 18 months on board the tugs

See the diagram in Fig.12

.3 After this stage he has to join the MTC for 10 weeks to study and pass an examination in the subjects mentioned in 5.4.2

In addition they have to attend the fire fighting, personal survival and first aid courses mentioned in 5.4.9, 5.4.10, 5.4.11 respectively.



CLASS B = FOR PERSONS IN-CHARGE OF HARBOUR CRAFT SUCH AS MOORING BOATS AND PILOT LAUNCHES
CLASS A = FOR PERSONS IN CHARGE OF HARBOUR CRAFTS SUCH AS TUGS

FIG.12 TUGMASTER, PILOT LAUNCH AND MOTOR BOAT MEN TRAINING PROGRAMME

5.1.3 Pilots:

All Pilots as mentioned in chapter one, master mariners. There is no theoretical course concerning shiphandling and advanced techniques of manoeuvring for pilots. The basis of training the pilots is on the job training through which they acquire their experience.

The pilots are handling various types of ships of different tonnages. The developments in the Oil Harbour and the Inner Harbour will enable these to accommodate other type and larger sizes of ships, which the pilots are not used to. In addition, new systems of berthing such as S.P.M. might be adopted at Bir Ali after extension of the oil pipes from the oil fields. The pilots are not used to handling ships at such a system of berthing. These types of buoys are very costly, and trained marine personnel are needed to handle ships at such berths efficiently and safely. In adddition, the pilots have not undertaken any refresher courses concerning shiphandling, and have not even updated their nautical knowledge since joining the pilotage work while a lot of changes have occurred in international shipping.

Moreover, the pilots, in addition to the task of pilotage, carry out the following types of surveys:

- cargo damage survey
- ship's hull damage survey
- draft survey
- off-hire survey
- marine accidents survey
- towing inspection survey

Up till now the pilots have acquired their experience in surveying through on-the-job training.

In view of the foregoing, it is necessary to refresh and update the pilots knowledge and retrain them with short courses of shiphandling for larger tonnages and new type ships in addition to training for the S.P.M. This can be performed partly by simulation courses.

They could all take the Nautical Institute course on " The Work of a Marine Surveyor " and graduate from this.

They also need updating and widening their knowledge concerning Marpol 73/78, Annex I and II, SOLAS 74/78, convention and protocols. They should also be required to attend the IMO Port State Control course, and the Marine Accidents and Incident Investigation course, fire fighting, personal survival and first aid.
(See paragraph 5.4.3).

5.1.4 National fleet officers and ratings

The officers on board the national fleet as mentioned in para 4.6 are the only certificated marine personnel on board national ships. They are in need of refresher courses concerning personal survival, fire fighting and first aid in order to comply with the minimum requirement of the STCW 1978.

The ad hoc employment of ratings in the national fleet and the low level of performance of such personnel without any maritime education can easily lead to dangerous and catastrophic events. It is necessary to train such personnel on the principles of seamanship and maritime safety.

It is essential for the seafarers onboard the national fleet to attend the following courses:

- personal survival (see Paragraph 5.4.10)
- fire fighting (see Paragraph 5.4.9)
- First Aid (see Paragraph 5.4.11)

These courses are mandatory requirements in the IMO 1978 STCW convention. Pilots, tugmasters, assistant tugmasters and ratings will also benefit from these courses.

5.1.5 Marine Sector Personnel

The Government intends to introduce computers to offices and industries. In this respect it is necessary to train the maritime sectors staff in the terminology and the use of computers (DOS, Word

Processing, Spreadsheats and Dbase systems). (See Paragraph 5.4.12)

5.2 Personnel Selection for Future Operation

5.2.1 Educational Level

As mentioned in the previous chapters the selection criteria of maritime personnel for employment on board the harbour crafts are old fashioned.

In order to cope with the new developments and create marine qualifications able to operate in the updated ports, higher selection criteria have to be implemented.

It seems reasonable that the minimum pre-sea level for personnel in charge of harbour craft as well as ratings on board of the national fleet, should be 12 years of general education including "English" ability (secondary school level).

For pilots the admission requirement should be a certificate of competency as Master (F.G.).

5.2.2 Age Limits

The age of the maritime personnel at the first employment for harbour crafts and the national fleet should not be less than 18 years and not more

than 24 years. The reason for the low age of entry is that at this earlier stage the young person can assimilate and easily understand the maritime education and training. The reason for the upper limit is that the maritime sector can benefit from a sufficiently long service period.

As for pilots, the entry age should be between 28 and 34 years.

5.2.3 Health

Personnel should be free from disease, medically fit and have sound hearing and good eyesight. They should undergo an eyesight test, which comprises of letter and lantern tests to ensure that they can see distant objects clearly, can read without glasses and are free from colour blindness.

5.3 The Maritime Training Centre (MTC)

5.3.1 Basis for the decision to establish the MTC

As mentioned in chapter three new ports have been established in Mukalla and Nishtun. The Oil Harbour at Little Aden has been renewed and expanded to accommodate large tankers and the Inner Harbour at Maalla is now completing a comprehensive project for modernization and extension to receive large and specialized vessels. This requires the YPA to introduce a new management system and to

adopt the level of education and training of their personnel in the field of shiphandling, harbour and cargo operation to meet the new situation. Personnel of other maritime sectors, such as National Dock Yard (N.D.Y.), Yemen Navigation Line (Y.N.L.) and the National Shipping Company (NATSHIP) which are also playing a part in the port activities also need to be educated, trained and upgraded to keep abreast of the new developments.

The Ministry of transport, which supervises these four sectors, has recognized the urgent need to provide training to the workforce of the maritime sector . Organized training and manpower development embracing skilled labour , technicians and middle and high management staff is considered necessary for revitalizing the maritime industry in order to contribute to the growth of of national economy.

Sending personnel for training overseas costs the Government a lot of money. For example, the cost living in Europe per day is at least US$ 100, and the cost of training for one person per day amounts to at least US$ 100 as well. (Crown Agent brochure for details of training courses in Appendix 3 page). Thus, local facilities for education and training should be used to their full potential.

There are facilities and workshops in the aforesaid marine sectors and as well in other institutes and centres in the country such as:

.1 Vocational Training Centre (V.T.C.)

This centre is under the responsibility of the Ministry of Labour. It conducts three types of courses: construction, mechanical and electrical. The centre admits students who have completed the intermediate school study i.e reached the age of about 15 years. The period of VTC study is three years consisting of theoretical and practical training and after examination the student qualifies as a third grade semi skilled worker. The centre has several well equipped workshops in Aden.

.2 Industrial Training Institute (I.T.I)

The above institute conducts courses in technical subjects leading to the award of diploma (as have been mentioned in the IMO Mission Report 1988). The course covers theory and practical and are suitable for training of technician / supervisory level posts.

.3 Institute of Fish Wealth (I.F.W.)

This institute was established in 1970 under the Ministry of Fish Wealth with the help of USSR for training personnel for deep sea fishing vessels. Recently the institute was provided with new modern equipment, teaching aids and workshops. The curriculum and syllabus have been revised by an expert from the FAO (as has been mentioned in the IMO Mission Report 1988).

.4 Marine Science and Resources Research Centre

This was established in 1983 by the Government with assistance of the UNESCO and the Islamic Development Bank. It has major facilities such as laboratories, library, workshops for mechanics, electricity and electronics. In addition, the centre has a small vessel "Ibn Majid" capable of carrying out standard oceanographic and fisheries research operations. The centre's function is to carry out research devoted to sea resources, marine pollution and its prevention.

5.3.2 Utilization of the in-country facilities and workshops

The availability of training facilities and workshops in the above-mentioned institutes and centres could be utilized for training marine personnel. However, in view of the lack of specilised training facilities and courses in subjects such as cargo handling and port operations, maritime safety, maritime English and seamanship, the Government, with the help of the UNDP and the recommendations of experts from UNIDO, UNCTAD and IMO, reached a decision to establish the Maritime Training Centre. The MTC started to deliver coursesin May,1989.

5.3.3 Organizational Structure of the MTC

The MTC is staffed with a Director of Training and two Assistant Training Managers, one for deck

and the other for engineering, carrying out the functions of instructors in the MTC. In addition there is one Computor Teaching Staff Member, Librarian, one Administrative Officer, Typest, a Messenger, Cleaner and 4 Watchmen.

An International Training Expert is located at the MTC by IMO to work together with the Director of Training and his assistants in running the required course programme at the MTC.

A National Project Co-ordinator was appointed by the Ministry of Transport as a link between the UNDP, the Ministry and the MTC to monitor the execution of the project (see fig.13)

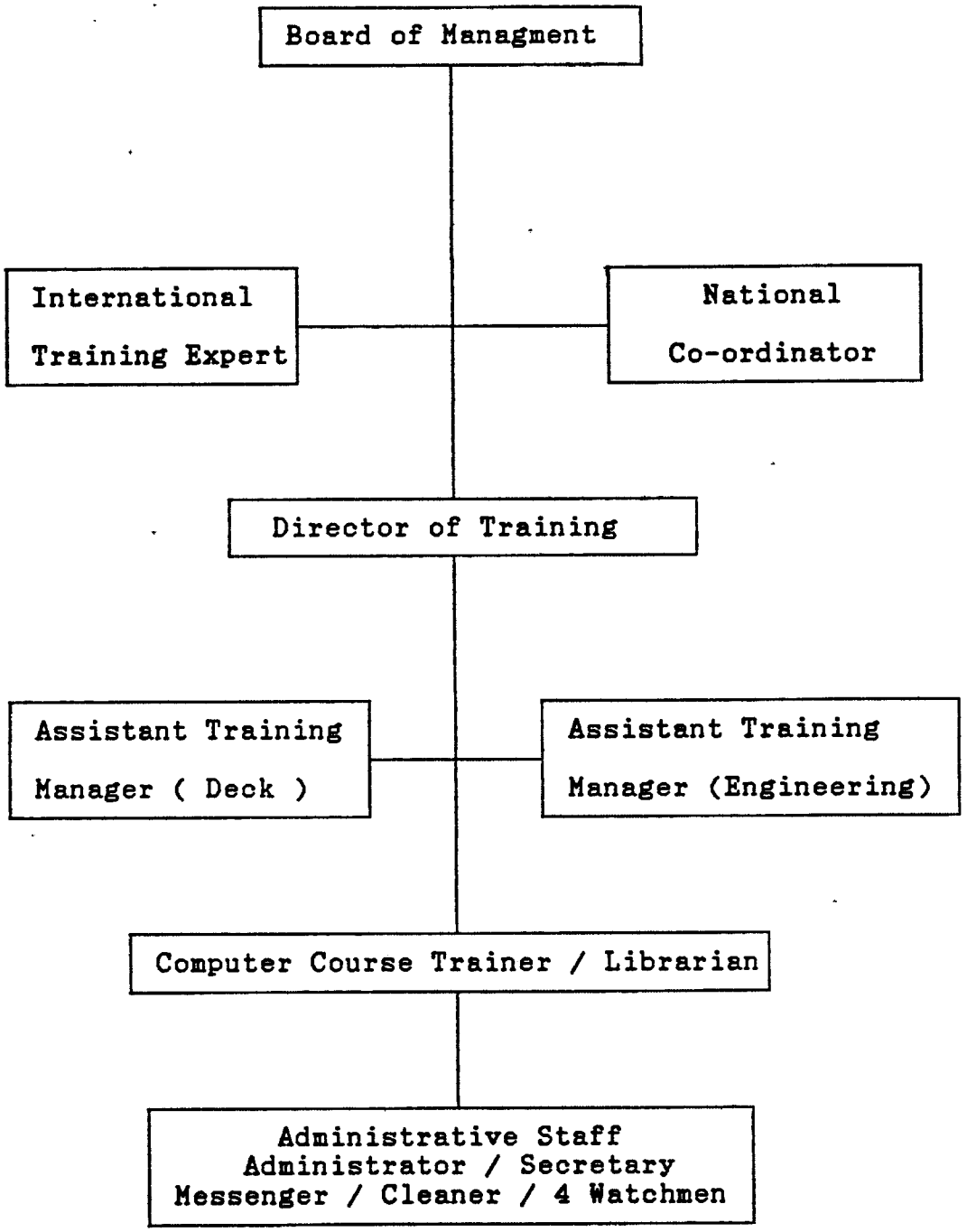


FIG.13 ORGANIZATIONAL STRUCTURE OF THE MTC

5.3.4 The MTC Management

The MTC was originally managed by a board consisting of representatives from the following sectors:

- Ministry of Transport Yemen Ports and Shipping Corporation represented by one member who, at the same time, is the Chairman of the board
- Yemen Ports Authority
- National Dock Yard
- Yemen Navigation Line
- National Shipping Company

The Board was responsible for organizing the ongoing function and operation of the MTC and deciding on the national maritime policy and training. The MTC now falls under the auspices of Yemen Ports Authority and is funded via this source.

5.3.5 Facilities of the MTC

- Classrooms	3
- Library	1
- Store	1
- Exercise materials (fire fighting etc.)	0
- Television	1
- Video cassette recorder (VHS)	1
- Video camera	1
- Radio cassette recorder	2
- Slide projector	3
- Screens	5

- Overhead projector (OHP) 3
- Photo copying machine 2
- PC computers / Word Processors for administration (Mackintosh Plus) with 40mB Hard Discs 2
- English Language laboratory for 16 students 1
- Coputer laboratory 1
- Minibus 1

Additional equipments being purchased during 1990 year includs:

- Hydraulic system training videos and materials
- Maintenance management videos and materials
- 2 Additional Mackintosh Computers, printers and HD's
- 7 IBM compatible computers for training with 20/40 mB HD's and 5 printers
- Computer projection facility for teaching computer subjects.

5.3.6 MTC Objective:

The MTC aims to train various personnel the marine sector and provide them with essential knowledge required to enable them to carry out their tasks efficiently, safely and correctly and to cope with the new developments in international shipping.
These objectives can be summarized as follows:

.1 to prepare MTC staff for the delivery of

the various courses for maritime personnel;

.2 to train marine personnel in English Language skills to enable them to engage in conversation, reading and writing in English to a reasonable standard;

.3 to train marine sector staff with sound knowledge of maritime terminology and procedures to enable them to communicate effectively such as :

- personnel working in the port control stations responsible receiving ships on their arrival at the port limit
- personnel who board ships and who deal with foreign ships's staff

.4 to provide the trainee with ability to prepare reports related to their work;

.5 to train marine sector staff responsible for terminal operation in implementing proper techniques for planning and controlling all cargo handling activities, general cargo and containers relating to a container terminal, on board ship, in the container yard and in the container freight station;

.6 to train marine sector staff responsible for or associated with cargo tallying operation in using proper techniques, accurately completing appropriate documentation, examining the cargo tallying and the reporting procedures;

.7 to train marine staff in safe working practice and to create safety awareness;

.8 to train marine sector staff concerned with freight forwarding procedures and multi-

modal operations;

.9 to provide marine sector staff with the ability in operating the PC computers and how to use the software programme package of word processing, spread sheets and how to apply these within their organizations;

.10 to train marine sector staff responsible for operation of lifting appliances on the safe and efficient use of such appliances and equipments, the maintenance, inspection procedures and proper operational techniques;

.11 to train marine sector staff responsible for the handling of dangerous and hazardous cargo on the sources of information of such cargoes and proper techniques for planning and controlling the handling of these cargoes;

.12 to provide trainee who are working on board the harbour crafts with skills required to enable them to work safely and efficiently;

.13 to provide marine personnel in the YPA Operations Department with information on and practice in efficient cargo operations;

.14 to train marine sector personnel with basic training skill in dealing efficiently, effectively and safely with fighting fires ;

.15 to train marine sector staff responsible for plant and equipment maintenance on the proper techniques for planning and controlling plant and equipment maintenance so as to raise the efficiency and prevent delay of ships due to poor maintenance;

.16 to train middle managers in all departments of the National Shipping Company in the modern

procedures for managing a shipping agency and provide them with an awareness of the usefulness of computers to their organization;

.17 to train marine personnel in the implementation of IMO conventions through the Port State Control courses;

.18 to update port pilots with maritime knowledge and train them on shiphandling techniques;

.19 to upgrade the national fleet ratings and train them on the mandatory courses concerning fire fighting, personal survival and first aid;

.20 to conduct examinations for the various courses.

5.3.7 Project PDY/86/010 - Co-operation with UNDP

The above project is funded by the UNDP and is being implemented by IMO . The objective of the project is to further support the establishment of the Maritime Training Centre and to assist the Government in meeting its needs for efficient operation and management of the ports, repair facilities, shipping agency work and ship operation. This is being achieved mainly through an in-service training programme. The project provides, inter alia:

- A full-time International Training Adviser to work with the staff appointed to establish and operate the MTC
- Consultancies to enable consultants to be called to the Republic of Yemen to run

training courses for marine sector personnel and trainers

- Training opportunities for staff in teaching methods and in the development and delivery of specialized courses.
- Equipment to provide teaching materials and necessary items for the operation of the MTC
- Fellowships to enable selected marine personnel to attend specialized courses at the World Maritime University and other overseas training centres.

In addition, the project providing the means of creating and strengthening link with other Regional Training Centres, such as those in Sharjah, Aqaba and Alexandria. Co-operation with these centres results in the interchange of personnel and exchange of educational experience and teaching materials.

5.3.8 Selection of Courses and Trainees from the Marine Sector

The selection of courses and trainees is carried out between the International Maritime Adviser at the MTC and the managers of the maritime sectors. Courses required are identified and numbers of trainees quantified from the personnel in the ports of the Republic.

In addition a plan of action for the Port of Aden has been prepared by the Association of

British Ports in a consultancy document describing what will be needed for the Operations and Wharves Department in the port.

In the light of that document the YPA Operations Department prepared a preliminary analysis for required training including a list containing details of courses required, number of personnel proposed for each course and the period required for each course. This analysis has been submitted to the MTC and the MTC has prepared the programme for training requirements to meet the local need of the port.

5.3.8 Present Courses for Maritime Personnel

At present some course are carried out by the Maritime Training Centre in the Port of Aden. These courses are:

1. English Language (4 courses - IMO).
2. Management of Container Terminal Operations (UNCTAD TRAINMAR 2.6).
3. Cargo Tallying (IMO/UNCTAD).
4. Safe Working Practice (IMO).
5. Practical Freight Forwarding (UNCTAD -TRAINMAR 5.2).
6. Shed Supervisors (UNCTAD).
7. Lifting Appliances Operation (IMO).
8. Dangerous and Hazardous Cargoes (IMO).
9. Basic Seamanship (IMO).
10. Management of General Cargo Operations (IPP1 - UNCTAD).
11. Basic Fire fighting (IMO).

5.4 Proposed Courses

A number of courses will be required by the MTC depending on existing and future needs for the various marine sectors. Some courses are proposed here:

5.4.1 Pilot Launches and Mooring Boats Crew Training

5.4.2 Tugmasters Training

5.4.3 Pilot Training

5.4.4 Port State Control

5.4.5 Marine Accidents and Incidents Investigation

5.4.6 Marine Pollution and Pollution Prevention

5.4.7 Dangerous and Hazardous substances

5.4.8 Seafarers Training (Ratings)

5.4.9 Fire Fighting

5.4.10 Personal Survival

5.4.11 First Aid

5.4.12 Computer Training

5.4.1 Pilot Launches and Mooring boats men Training course

.1 Target Population

Marine personnel working on board harbour crafts such as pilot launches, mooring boats and any other harbour craft other than tugs from the YPA, YNL, NATSHIP, ARC and any other marine sectors.

2 Objectives

To provide the trainee with the skill to enable them to work safely and efficiently in using ropes, wires, rigging, safety procedures in manoeuvring launches and mooring boats.

.3 Materials and Equipments required:

Course notes, OHP and slides, ropes and wires flags, VHF.

.4 Consultants, Instructors and Potential Sources:

Instructors are available within the MTC. Course materials to be developed within the MTC

.5 Contents of the Course (Details in Appendix 4)

		Hours
.1	Seamanship	30
.2	Anchor and Anchoring	15
.3	Navigation and buoyage	25

.4	Berthing System in the Port	10
.5	Boat Handling	10
.6	Steering Certificate	15
.7	Environment Protection	10
.8	Colreg	30
.9	Communication	15
.10	English Language and Nautical English	30
	Total	190

.6 **Examination:**

After completing this course, trainees have to undergo a written examination. Oral examination is also needed in manoeuvring, buoyage and communication in addition to a test in English Language which has been taken in the evening classes. After passing the exam trainees are granted a certificate, "Class B Certificate for person in-charge of motor boat" with a validity of 5 years.

5.4.2 Tugmasters Training Course:

.1 Target Population:

Marine personnel in charge of harbour tugs from the YPA and other marine sectors involved in the harbour activities.

.2 Objective:

- To build up a high level of marine personnel on board the harbour tugs to enable them to handle tugs efficiently and safely.
- To direct them to the correct way in handling and correct way in using the communication means with the pilot.
- To assist in fire fighting, pollution combat and SAR.

.3 Material and Equipments required:

Course notes, OHP and slides, training films, ropes, wires, charts, parallel rules, compasses and dividers, barometers (aneroid), dry and wet bulb thermometer, VHF, fire fighting equipment.

.4 Consultants, Instructors and Potential Sources:

Instructors are available within the MTC. Course materials to be developed within the MTC.

.5	**Contents of the Course:** (Details in Appendix 4(a)	Hours
.5.1	Seamanship and Shiphandling	45
.5.2	General Ship Knowledge and Stability	44

.5.3	Meteorology	10
.5.4	Navigation and Pilotage	30
.5.5	Navigational Practice	76
.5.6	Colreg	30
.5.7	Communication	15
.5.8	Pollution	30
.5.8	SAR	20
	Total	300

.5.10 **Examination:**

trainees after completing this course have to sit for written examination. An oral examination is also needed in manoeuvring, buoyage, signals and communication. after passing trainees are granted a certificate, "Class A Certificate for person in-charge of harbour tug", with a validity of 5 years.

36 **5.4.3 Pilot Training Course**

This course aims to train newly employed pilots and refreshes and upgrades the pilots who are already employed.

.1 Target Population

Pilot trainees and experienced pilots working in Yemeb.

.2 Objectives

- to provide the pilot trainee with sufficient knowledge about various ships and their engine particulars;
- to provide the pilot trainee with advanced techniques of ship handling and pilotage;
- to enable the pilot trainee to render assistance to ships in cases of emergency;
- to act as adviser to the ship's master for any information about the port and its activities
- to enable the pilot trainee to participate in search and rescue operations;
- to enable the trainee to make good use of modern communication equipment;
- to enable the trainee to perform as a qualified surveyor in certain maritime aspects;
- to provide the trainee with adequate knowledge of pollution prevention and environmental protection

.3 Material and Equipments

Course notes, OHP and slides, video films, charts, parallel rules, dividers compasses, tide tables, VHF, Radar and ARPA.

.4 Consultants, Instructors and Potentials sources

Instructors are available within the MTC. They require teaching material in shiphandling in order to deliver the course. The following books are recommended:

- The Theory and Practice of Seamanship
  By Graham Danton
  Routledge & Kegan Paul - London , 1985

- Shiphandling for the Mariner
  By Daniel H. MacElelrevey
  Cornell Maritime Press (CMP), Centreville, 1983

- Shiphandling With Tugs
  By George H. Reid
  Cornell Maritime Press (CMP), Centreville, 1986

- Behaviour and Handling of Ships
  By Henry H. Hooyer
  Cornell Maritime Press (CMP), 1983

- Shiphandling in Narrow Channels 3rd edition
  By Carlyle J. Plummer
  Cornell Maritime Press (CMP), 1986

- Pilot Take Charge
  By W. Bartlett-Prince
  Brown, Son and Ferguson, Glasgow

- Admiralty Manual of Navigation Vol.I
  Her Majesty's Stationery Office, London, 1987

- Nicholls's Concise Guide to Navigation Vol.I
  By Edward Coolen
  Brown, Son & Ferguson, Glasgow

- Marine Survival and Rescue System
  By D.J.House
  E.&F.N. Spon, London

- Merchant Ship Search and Rescue Manual (MERSAR)
  IMO

- Handbook on Marine Pollution
  By E. Gold, Assurance Foreningen Gard, Norway.

- Oil Pollution form Ships
  International UK and US Law and Practice
  D.W. Abecassis and R.L.Jarashaw. Stevens and sons,1985.

- Lloyd's Survey Handbook (Cargo Damage)
  Edited by K.G.Knight, 1985,Lloyd's of London

- Stowage - Thomas' Stowage
  R.E.Thomas, O.O.Thomas and S. Agnew.
  Brown, Son and Ferguson, 1985.

- Survey - Marine Surveys
  C.F.Duham. Fairplay Publication, 1982.

.5 Contents of the Course	Hours
.1 Limits of local pilotage area	3

.2	International Regulations for Prevention Collision, 1972, and also such other national and local navigational safety and pollution prevention rules as may apply in the area.	15
.3	System of buoyage used in the area.	3
.4	Characteristic of the lights and their angles of visibility, racon and radiobeacon in use in the area.	2
.5	Names, positions and characteristics of the buoys, beacons, structures and other marks in area.	3
.6	Names and characteristics of the channels, shoals, headlands and points in the area.	3
.7	Proper courses and distances in the area.	3
.8	Vessel traffic services and similar ship traffic management system in the area.	5
.9	Depths of water throughout the area, including tidal effects and similar factors.	3
.10	General set, rate, rise and duration of the tides and use of the tide	

	table for the area.	15
.11	Anchorage in the area.	2
.12	Bridge equipment and aids to navigation.	7
.13	Use and limitations of radar and automatic radar plotting aids (ARPA), and radar plotting.	30
.14	Communication and availability of navigational information.	5
.15	System of radio navigational warning broadcast in the area and the type of information likely to be included.	2
.16	Manoeuvring behaviour of the types ships expected to be piloted, and the limitations imposed by particular propulsion and steering systems.	15
.17	Factors affecting ship performace such as wind current, tide, channel configuration, water depth, bottom, banks and ship interaction.	15
.18	Use and limitation of tugs	
.19	English Language to a standard adequae to enable the pilot to express himself clearly in his communications.	30

.20 Search and Rescue.	20
	181

Examination:

Trainees after completing of the course have to undergo a written examination. Oral examination is needed in ship manoeuvring, anchor work and general knowledge of the harbour. After successful completion of the exam trainees are granted a certificate. The pilot trainee has to continue the practical training in the marine department as usual for 200 ships after which he has to pass the practical examination under supervision of the Harbour Master in order to be entitled to the pilot's licence.

5.4.4 Port State Control Course

See IMO Model Course 3.9 in Appendix 4(b)

.1 Target Population

YPA Surveyors, masters,chief officers and senior engineer officers.

.2 Objective

To enable the trainees from the maritime sector concerned with the Port State Control to:

- identify the responsibilities of the Flag State to exercise control over their ships and explain the role of a Port State Control in supplementing such control;
- identify and correctly use those instruments available for Port State Control;
- correctly identify and properly report deficiencies to the flag State, IMO and, if appropriate, ILO;
- maximize regional co-operation.

.3 Materials and Equipments required

Course notes, training films, OHP and slides. Course notes, OHP slides to be provided by consultant and copied by MTC. Visits to vessels to be arranged with the Marine Department of YPA.

.4 Consultants, Instructors and Potential Sources

Consultant to be arranged through IMO for first delivery.

.5 Contents of the Course hours

See IMO Model Course 3.8 in Appendix 4(b)

.1	Need for Control	10.0
.2	Main Elements of the Convention	30.0
.3	Documentation	6.0
.4	Inspection of Ships	20.0
.5	Action by the Port State	5.0
.6	Practical Port State Control Training	30.0
	Total	101.0

Examination

At the completing of the course trainees have to undergo a written examination. After passing they will be granted a certificate.

5.4.5 Marine Accident and Incident Investigation

See IMO Model Course 3.11 in Appendix 4(c)

.1 Target Population

Ship's surveyor in YPA (pilots) and NDY (Hull, machinery, hull and nautical).

.2 Objective

To enable trainees to organize and conduct investigations into marine accidents and incidents in accordance with generally accepted practices, subject to familiarizing themselves with the national law and regulations governing the conducts of marine investigations in the State concerned and any guidelines, investigation manuals or instructions issued by the Administration concerned

.3 Materials and Equipments required

Course notes, Training films, OHP and slides

.4 Consultants, Instructors and Potential sources

Consultants to be arranged through IMO for first delivery. Course notes and OHP slides to be provided by the consultant and to be copied by MTC.

.5 Contents of the Course — Hours

Details in Appendix 4(c)

Course Introduction		2.0
.1	International Obligations	7.0
.2	Investigation Purpose and Procedures	30.0
.3	Analysis of Evidence	25.0
.4	Inquiry Reports	20.0

.5	Administration of investigation	30.0
.6	Findings and Recommendations	5.0
.7	Group Activity Case Studies	30.0
	Total	149.0

Examination

Trainees completing this course have to undergo a written examination. After passing they are granted a certificate.

5.4.6 Pollution and Pollution Preventions Course

See IMO Model Course 1.11 and 1.12. concerning MARPOL 73/78 Annex I and II respectively. The other Annexes III, IV and V also added as part of this course.

.1 Target Population

Surveyors, masters, deck officers and engineer officers, personnel in maritime administrations, marine and engineer superintendents.

.2 Objectives

Trainees should be able to appreciate the reasons for concern about pollution of the marine environment, understand the impact of oil, noxious liquid substances, harmful packed goods, sewage, garbage pollutionon the sea. They should be able to describe how ships contribute to this form of pollution and explain the international rules aimed at prevention of such pollution. Trainees will also be able to comply with these rules and describe the monitoring measures designed to ensure compliance. In addition they should be able to explain in detail the principles involved in the prevention of marine pollution by oil, noxious liquid substances, harmful packaged goods, sewage and garbage through specific construction and equipment requirements for oil and chemical tankers, and to comply effectively with the relevant operational requirements.

.3 Materials and Equipments

Course notes, training films, OHP and slides.

.4 Consultants, Instructors and Potential Sources:

Consultants to be arranged through IMO for first delivery. Course notes and OHP slides to be provided by consultants and to be copied by MTC.

.5 Contents of the Course

IMO Model course 1.11 in Appendix 4(d)

Part 1	Hours
1. Marine Pollution	10.0
2. MARPOL 73/78 Annex I	10.0
3. Control of Oil Discharge from Machinery Spaces	10.0
4. Documentation	3.0
5. Miscellaneous	21.0
Part 2	
1. Introduction	3.0
2. control of Oil Discharge from Oil Tanker	20.0
3. Documentation	2.0
	79.0

Part 3

IMO Model Course 1.22 in Appendix 4(d)

1. Introduction to chemical and liquified gas tankers	3.0
2. MARPOL 73/78 Annex II	10.0
3. Discharge of Noxious Liquid Substances (NLS)	10.0
4. Unloading, Stripping and Prewash Operation	5.0
5. Documentation	2.0

6. Miscellaneous	2.0
	32.0

Other subjects not mentioned above:

1. MARPOL 73/78 Annex III	3.0
2. MARPOL 73/78 Annex IV	3.0
3. MARPOL 73/78 Annex V	3.0
	9.0
T o t a l	120.0

.6 **Examination:**

Trainees completing this course have to undergo a written examination. After passing to be granted a certificate.

5.4.7 Dangerous and Hazardous Substances Course

.1 Target Population

Marine sector staff at supervisory, middle and higher management level who will take immediate responsibility or be closely involved in the planning and handling of dangerous and hazardous cargoes transport.

.2 Objective

To train the staff responsible for the handling of dangerous and hazardous cargo in:

- understanding the properties and characteristic of dangerous cargoes, their potential hazards and classification;
- finding out the sources of information on dangerous and hazardous cargoes;
- understanding the proper techniques for planning and the handling of these cargoes;
- examining procedures for handling of these cargoes and determining their effectiveness;
- establishing proper procedures for the handling of these cargoes.

.3 Material and Equipment required

Course notes, film strips, audio tapes, projector, OHP and slides. Course notes, OHP slides to be provided by consultant.

.4 Consultant, Instructor and Potential Sources

Consultant to be arranged through IMO Headquarters for 1st delivery. MTC staff to run 2nd delivery.

.5 Contents of the Course	Hours
.1 Introduction	2
.2 Classification	3
.3 Health hazards and environmental hazards	3
.4 Conventions, regulations and recommendations	5
.5 General use and familiarization with IMDG Code	5
.6 Shipboard Application	3
.7 Safety precautions and emergency procedures	5
.8 Medical First Aid	4
T o t a l	30

Examination:

Trainees after completing such course have to undergo a written examination. After passing to be granted a certificate.

5.4.8 Seafarers Course (Ratings)

.1 Target Population

The crew of the national fleet from the YNL and the ARC.

.2 Objective

- To provide the trainee with the necessary skill to work safely and efficiently on board

.3 Materials and Equipments required

Course notes, OHP and slides,ropes, wires, models. Course notes to be developed in the MTC.

.4 Consultants, Instructors and Potential Sources

Instructors available in the MTC.

.5 Contents of the Course Hours

Details in Appendix 4(e)

.1	Basics of Seamanship	50
.2	Anchor and Anchoring	19
.3	Lookout and Steering	18
.4	Ship and Boat handling	10
.5	Buoyage	5
.6	Cargo Handling and gears	13
.7	Collision Regulations	30

Communnication	14
	159

Examination

Trainee attending this course should have at least six months sea-time. After completion of this course, trainee has to undergo a written examination. Oral examination is needed in boat manoeuvring, buoyage, signals and lights. After passing a certificate is provided.

5.4.8 Fire Fighting course

See IMO Model course 1.20 in Appendix 4(f)

.1 **Target Population**

The seafarers in the national fleet from YNL, ARC and the marine personnel on the harbour craft from YPA and other parts of the marine sectors.

.2 **Objective**

- To enable the seafarers to react in a correct way in the event of a fire, to take appropriate measures for the safety of personnel and the ship
- to use the fire appliances correctly. The trainee will be able to state and demonstrate that he has acquired knowledge and skills which will enable him to identify and correct cases of fire.

.3 **Material and Equipments required**

Course notes, OHP and slides, training videos, fire extinguishers, hoses, protective clothing, breathing apparatus.

.4 **Consultants, Instructors and Potential Sources**

Instructors available within MTC.

.5 **Contents of the Course**

		Hours
.1	Introduction, Safety and Practice	1.0
.2	Theory of Fire	4.0
.3	Fire Prevention	2.5

.4	Fire Detection systems	1.0
.5	Fixed Fire-extinguishing systems	3.0
.6	Miscellaneous Fire-fighting Equipment	3.0
.7	Ship Fire-fighting Organization	2.0
.8	Fire-fighting Methods	1.5
.9	Fire-fighting Drills (for a group of 10 trainees)	9.0
.10	Review and Final Assessment	3.0
	Total	30.0

Examination

Trainees completing this have to undergo a written examination. After passing they are granted a certificate with a validity of 3 years.

5.4.10 Personal Survival Course

See IMO Model Course 1.19 in appendix 4(g)

.1 Target Population

Seafarers on board the national fleet and marine personnel on board the harbour crafts of YPA.

.2 Objective

Trainees will learn to react in a correct manner during emergency situation, take appropriate measures to his own survival and to the survival of others, and use survival equipment correctly . He will also acquire knowledge which in some instances will enable him to identify and correct defects and thereby prevent emergency situations.

.3 Materials and Equipments required:

Course notes, OHP and slides, training videos, lifejackets, lifebuoys, immersion suits, liferaft and lifboat. Liferafts are available onboard the harbour tugs.

.4 Consultants, Instructors and Potential Sources:

Instructors available within the MTC.

.5 Contents of the Course — **Hours**

Details in Appendix 4(g)

.1	Introduction, Safety and Survival	2.0
.2	Emergency Situations	3.0
.3	Evacuation	2.0
.4	Survival Craft and Rescue Boat	3.0
.5	Personal Life-saving Appliances	2.0

.6	Personal Life-saving Appliances (Demonstration)	10.0
.7	Survival at Sea	1.0
.8	Helicopter Assistance	1.0
.9	Emergency Radio Equipment	2.0
.10	Radar transponder and GMDSS (additional topic not mentioned in the IMO course)	2.0
.11	Review and Final Assessment	2.
	T o t a l	30.0

Examination

Trainees completing this course have to undergo a written examination. After passing they are granted a certificate with a validity of 3 years. It is proposed that this course to be revalidated every three years.

5.4.11 First Aid Course

See IMO Model course 1.13

.1 Target Population

The seafarers on board the the national fleet and the marine personnel on board the harbour crafts.

.2 Objective

- To enable the seafarer, of the national fleet to provide immediate basic medical care at the scene of an accident or other medical emergency until the arrival of a person with first aid skills or the person in charge of medical care abroad.

.3 Materials and Equipments required

Course notes, video films, OHP and slides

.4 Consultants, Instructors and Potential Sources

Lecturer can be arranged from Port Health Authority.

.5 Contents of the Course

		hours
.1	General Principles	2.0
.2	Body Structure and Function	2.0
.3	Positioning and Casualty	3.0
.4	The Unconscious Casualty	3.0
.5	Resuscitation	4.0
.6	Bleeding	3.0
.7	Management of Shock	2.0
.8	Burns and Scalds, and Accident caused by Electricity	2.0
.9	Drowning and suffocation	2.0

.10 Broken limbs	2.0
.11 Rescue and Transport of Casualty	3.0
.12 Other Topics	2.0
Total	30.0

Examination

Trainees completed this course have to sit for written examination. After passing he to be granted a certificate valid for 3 years. It is proposed that this course to be revalidated every three years.

5.4.12 Computer Training Course

.1 **Target Population**

- Marine sectors staff of all levels.

.2 **Objective**

- To enable the trainees to operate the Disk Operating System software of modern personal computers.
- To enable the trainees to operate a modern word-processing software package on a personal computer with confidence and efficiency
- To enable the trainees to operate modern database software package on a personal computer in order to provide them with the abilities to develop, store, retreive, edit data files and apply and be able to apply it in their organizations
- To provide the trainees with the ability to operate modern spreadsheet software package on a personal computer in order to apply it in their organizations.
- To train the MTC staff in the use of computers in relation to delivery of courses and administration purposes.

.3 **Material and Equipments required**

Computers with hard disk, printers, computer projection system (for instruction), floppy discs instruction books, paper, ribbon etc.

.4 **Consultants, Instructors and Potential Sources**

Project staff will cover the main teaching load, to be supported initially by a short term consultancy if considered necessary.

.5 **Contents of the course** Hours

Details in Appendix 4(h)

.1	Introduction to computers	10
.2	Disk Operating System (DOS)	20
.3	Word Processing Package	30
.4	Database Package (dBase)	30
.5	Spread Sheet Package	30
	Total	120

See details in Appendix 3.

.6 **Examination:**

After completing this course, trainees have to undergo a written examination. After passing they are granted a certificate.

CHAPTER SIX

Conclusions and Recommendations

6.1 As explained in the previous chapters it shows that the educational level of the personnel entering the marine profession is very low (elementary level). This low level of education will not assist the marine personnel on board the harbour crafts to understand properly the handling of modern harbour craft such as the VSP tugs. The personnel who handles them efficiently should have high level of education and a technical knowledge about the the principle their manoeuvrability. The tugmasters on board such tugs lacks both the high level of education and the technical knowledge that are required.

6.2 The same can be said about the radio communication. Because of their low level of education and the absence of the nautical education, they are not able to use the radio to communicate correctly.

6.3 Similar situation is present on board the national fleet in particular among the ratings. The majority have not even the elementary education but only attended classes of eradication of illiteracy.

6.4 In order to create a good level of marine personnel on board the harbour craft capable of handling tugs efficiently, new recruits should at least have a secondary education.

6.5 Ratings aboard national fleet should similarly have the same minimum qualification as mentioned in 6.4.

6.6 All new personnel entering the maritime profession should be medically fit and free from any diseases or physical defects. In particular stress should be given to good hearing and clear speech without impediment. They should also have good eyesight and not colour blind.

6.7 The pilots currently working in the ports of Aden, Mukalla and Nishtun are those who studied in 1970 and no other pilots have been trained after that. These pilots are going to retire at nearly the same time. There is no programme up to now to replace them. There is therefore an urgent need to establish a pilot training programme as proposed in Chapter 5, para 5.4.3.

6.8 The MTC is currently the sole centre other than the Institute of Fish Wealth for the training of maritime personnel and its presence is vital for the human resources development of maritime personnel for the country. In many maritime countries in the world financial support are provided by governments and port authorities towards maritime training. During my field studies in particular to Bremen and Hamburg, I visited the port training centres there and I was impressed with the financial support that such centres received for the purpose of human resource development in the maritime sector.

Also in the Newly Industrialized Countries (NICs)

such as Taiwan, Singapore, South Korea and Hong kong emphasis are given to training for the maritime sector. For this reason, these countries were able to develop their ports and national fleets quickly. Learning from their experience, I recommend that a greater support for the MTC be given by the government. For example, in Singapore part of the port dues collected goes to the support of the National Maritime Board which is responsible for the training of ratings and junior watchkeeping engineers for their national fleet. In addition, the Port of Singapore has its own training centre which are financed from the profits made by the port. I recommend that in addition to the government budget allocated to the MTC, a small percentage e.g 1-2 % of the port dues be assign to the MTC. Also, when the YPA makes a profit, a similar percentage can be deducted for the benefit of the MTC. In the long term, the MTC could be developed into a training centre for the region.

6.9 For the purpose of implementing the recommendations on fire-fighting and personal survival training the following infrastructure for MTC are recommended:

.1 A fire-house base on part of a ship superstructure.
.2 A swimming pool and a liferaft.
.3 A life-boat and davit

6.10 There are many courses which may be develop by the MTC. In addition to the current courses as mentioned in para 5.3.9, the other courses that are needed in the short and medium term as recommended in para 5.4

should be implemented as soon as possible.

As it is impossible to write in detail on all the courses which the writer considers necessary in this paper, the following list of courses should also be considered for the future:

.1 Nautical Surveyor Course (as recommended in the publication of the Nautical Institute, "The Nautical Institute on The Work of the Nautical Surveyor";
.2 Radar Observation and Plotting
.3 ARPA Course
.4 Radar Simulator Course
.5 Oil Tanker Familiarization Course
.6 Advanced Training Programme on Oil Tanker Operations

6.11 The MTC's responsibility for training marine personnel is not restricted to the Port of Aden but extends also to the other ports in the north part of the Republic such as the ports of Hodeidah, Mocha and the petroleum at Al-Salif. Attention should be given for training the pilots and refresher courses in shiphandling to senior pilots. In addition, it is necessary for the senior pilots to have shiphandling simulation courses for larger tonnages such as container ships, Ro-Ro ships and large tankers so as to provide them with more knowledge and abilities in shiphandling. This cannot be done in MTC due to unavailability of shiphandling simulators. A solution could found by sending senior pilots to institutions abroad that

conduct such training.

6.12 Pilot are encouraged to join the Nautical Institute and receive the IMO News so as to keep up with development in the marime sector, whicj would be supplemented by special courses for them at the MTC.

6.13 The MTC staff should be kept on new developments. This can be performed by exchange visits with other maritime centres and by attending IRNSLC conferences and IMLA conferences. Periodically experts from abraod could be invited for updating purposes.

6.14 As an extension to the writer's project, it is recommended that a study be done about the needs of the port in the north part of the Republic with regards to the training of the maritime personnel.

Granting of licences and certificates.

95.—(1) The Port Officer shall grant a licence as a tug master to any person who, in its opinion, is a fit and proper person to be in charge of a tug to be used within the port for the purpose of assisting ships to berth, unberth or otherwise move therein.

(2) The Port Officer shall grant a certificate to any person as—

(A) a person in charge of a craft who—

(i) (a) is in possession of a certificate of competency of not less than the grade serang granted by the Port Officer; and

(b) passess a colour vision test prescribed by the Board; and

(c) satisfies the Port Officer as to his knowledge of navigation in the port; or

(ii) (a) produces satisfactory evidence of not less than three years' service as a lascar in craft propelled by mechanical power; and

(b) passes a *viva voce* examination in navigation and the regulations for preventing collisions applicable to navigation in the port; and

(c) passes a colour vision test prescribed by the Board;

(B) an eingne driver, on such person passing an examination set by the Chief Engineer to the Board.

(As amended by G.N. No. 188 of 1961).

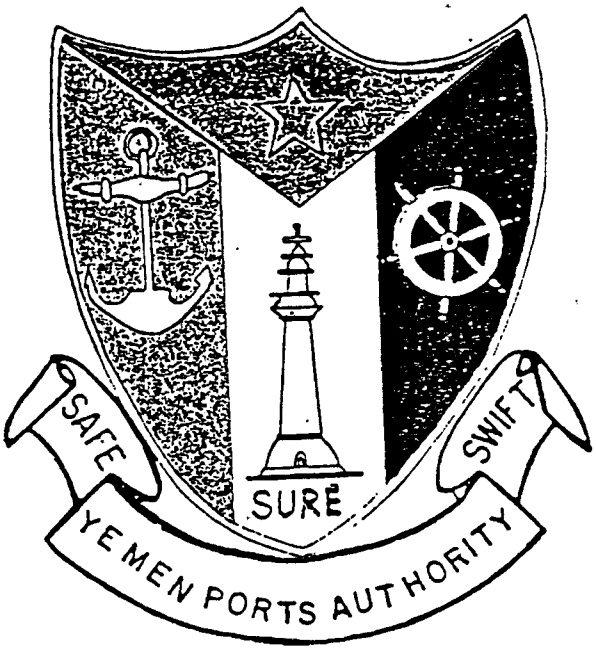
APPENDIX 1(a)

MINISTRY OF COMMUNICATION

YEMEN PORTS AUTHORITY

وَزارة المُوَاصَلات

مَصْلحَة المَوَانى اليَمَنيّة



AIDS

TO THE

SUCCANIES EXAMINATION

إرشادات للتقدم للامتحان

"كسكاني"

REVISED BY
CAPT. S. A. YAFAI
PORT OFFICER AND
DIRECTOR OF MARINE AFFAIRS

مراجعة
القبطان: سَعيد عبدالله يافعي
ضابط الميناء
ومدير الشئون البحرية

INTRODUCTION

In this booklet are some hints of what you are required to know when taking the Yemen Ports Authority Succannies Examination.

You must remember that as the Succannie of a launch or Tugmaster of a tug you are in charge. You give the Driver and the Deck Crew their orders and must see they are obeyed. Do not assume that they will know what to do.

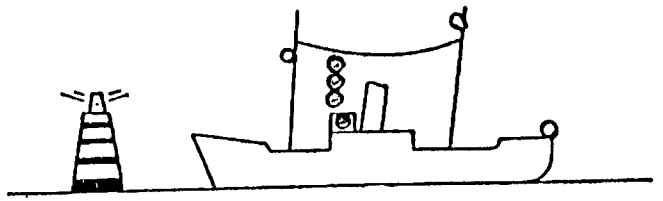
ALL ORDERS MUST BE GIVEN IN A CLEAR, FIRM VOICE so that they can be heard and understood.

When in the examination room remember to tell the examiner everything you would do particularly when applying the Rule of the Road.

i.e. 1) What helm orders you would use.
2) What engine orders you would give.
3) What hooter signals you would make.

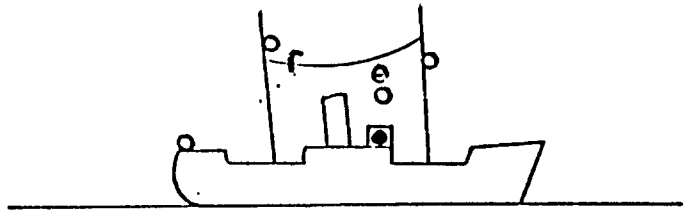
Think carefully before answering so that you give the right answer first time.

LIGHTS الانـــوار



Ship arriving Fairway Buoy - in Quarantine.

وصول سفينة مدخل الميناء (فيروى بوى) تحت الحجر الصحي (كرنتينة) .

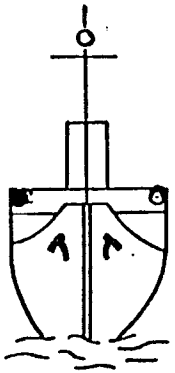


Ship leaving harbour with Pilot on board.

سفينة تغادر الميناء والمرشد عليها .

2 Masthead Lights
1 Stbd. light.
1 Port light.
1 Stern light.

٢ اضواء في اعلا الصارى
١ ضوء يمين .
١ ضوء يسار.
١ ضوء في المؤخرة.



Ship approaching end on.

سفينة تقترب على خط مستقيم .

مقدمة

في هذا الكتيب بعض ارشادات مما يتطلب منك معرفتها عند تقدمك للامتحان "كسكاني" الذى تقوم به مصلحة الموانى اليمنيـة يجب عليك ان تتذكر كسكانى زورق او قبطان قاطرة بانك المسئول الأول وعليك أن تعطي الاوامر اللازمة لتشغيل المكنة او البحارة على السطح . وتأكد بنفسك ان الاوامر تطاع ولا تتكل او تتوهم انهم يعرفون مايجب أن يفعلون .

يجب لعطاء الاوامر بصوت قوى واضح حتى يمكن سمعها وفهمـها .

تذكر عند الامتحان ان تخبر الممتحن بجميع ما ستفعله وخاصة عند تطبيق قانون الطريق .

وعلى سبيل المثال -

(١) ما هي الاوامر التي ستمارسها لتسيير الدفة .
(٢) ما هي الاوامر التي ستمارسها لتسيير المكنة (المحرك) .
(٣) ما هي الاشارات التي ستعطيها عند استعمالك النفير (الهون)

فكر ملياً قبل الاجابة لكي تعطي الجواب من اول مرة صحيحا .

RULE OF THE ROAD

These are International Rules compiled to prevent accidents between ships, launches, and sailing boats. These rules must be known very well because if you do not use them correctly there will be an accident.

When you alter course you MUST give a signal on your horn to tell the other craft what you are doing.

The signals are:-

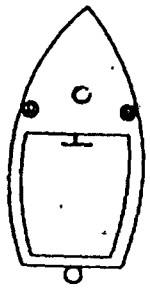
1 blast = "I am going to Starboard"
2 blasts = "I am going to Port"
3 blasts = "I am going astern"

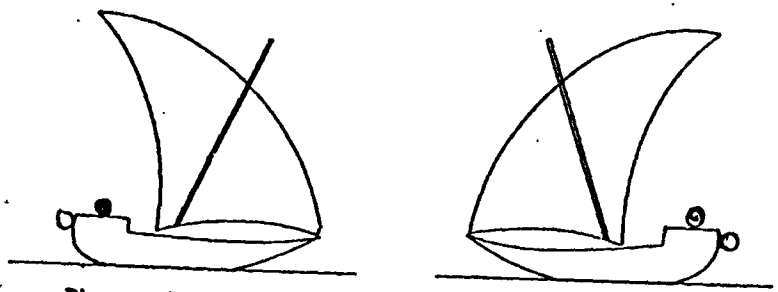
In the sketches which follow you are always in the black boat  with regard to the instructions at the side.

Remember that launches and tugs always keep clear of a sailing boat when it is under sail only. If their engine is working they obey the same rules as you do.

Think carefully before answering so that you give the right answer first time.

Motor Launch. زورق بخـــاري



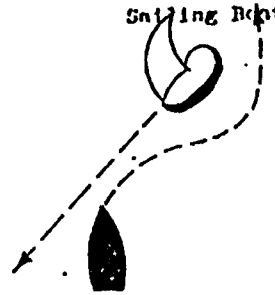
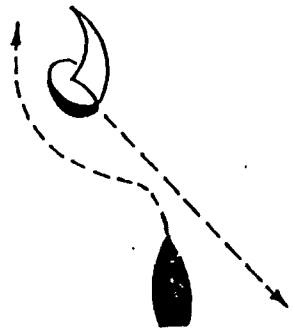
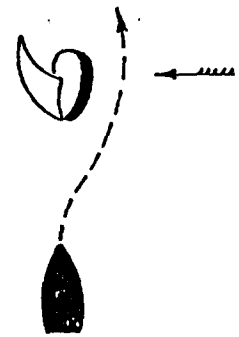


Dhow under sail only if the engine is working must carry a white light at the masthead.

سفينة شراعية تسخر البحر معتمدة على شراعها فقط. في حالة تشغيل المكنة يجب رفع ضوء ابيض في اعلا الصاري .

Tug towing a lighter in harbour, length of tug less than 200 metres

قاطرة تقطر صندلا في الميناء بحيث لا يزيد طول القاطرة على ٢٠٠ متر او ٦٠٠ قدم تقريبا

	Alter course to Stbd. Give 1 blast on horn. Pass under stern of dhow. غير الاتجاه نحو اليمين . اعطى ضربة بالنفير. مر من مؤخرة السفينة الشراعية .
	Alter course to Port. Give 2 blasts on horn. Pass under stern of dhow. غير الاتجاه نحو اليسار. اعطي ضربتين بالنفير. مر من مؤخرة السفينة الشراعية.
	Alter course to Stbd. Give 1 blast on horn. Pass to windward of dhow. غير الاتجاه نحو اليمين . اعطي ضربة بالنفير. مر في اتجاه الريح التي تسير في خط السفينة.

قـــانـــون الـطـريـق

وهذه هي قوانين عالمية عملت لمنع التصادم بين السفن والزوارق والسفن الشراعية. يجب الالمام بهذه القوانين لانك ان لـم تستعطيها على الوجه الصحيح فسيحدث اصطدام .

عندما تغير مجرى الطريق يجب ان تعطي اشـارة بالنـفير (الصفارة) لتنذر العوائم الاخرى بما انت مقدم عليـه .

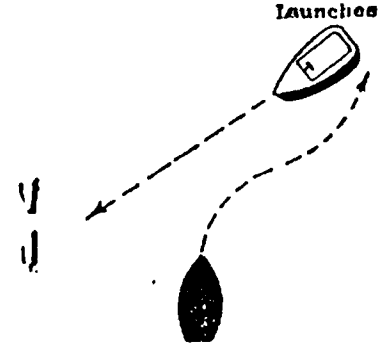
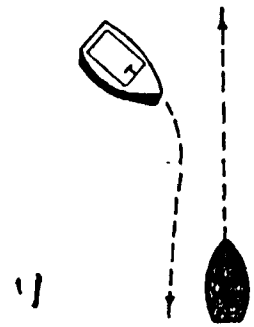
والاشارات هي كما يلي =

١ نفخة واحدة = انني متجه الى اليمين .
٢ نفختان اثنتان = انني متجه الى اليسار.
٣ ثلاث نفخات = انني متجه الى الوراء .

في التخطيطات التالية تخيل دائما وانك في القارب الاسـود مع مراعاة التعليمات التي على جانب التخطيطات (الرسمات)

تذكر ان القوارب والزوارق والقاطرات دائما تتنحى بعيدا عن طريق العوائم الشراعية المعتمدة على اشرعتها فقط. اما اذا كانت تسير بمحرك (مكنة) فانها تتبع نفس القوانين التي تتبعها انت نفسك .

فكر مليا قبل الاجابة لكي تعطي الجواب الصحيح من اول مرة.

Alter course to Port. Give 2 blasts on horn. Pass to windward of dhow. غير الاتجاه نحو اليسار. اعطي ضربتين بالنفير. مر من اتجاه الريح الذى تسير على منواله السفينة الشراعية.		القاطرات Launches القوارب و tugs and Alter course to Stbd. Give 1 blast on horn. Pass under stern of other motorboat. غير الاتجاه نحو اليمين. اعط ضربة بالنفير. اعبر اوطأ من مؤخرة الزورق الآخر.
Alter course to Stbd. Give 1 blast on horn. Pass under stern of dhow. غير الاتجاه نحو اليمين. اعطى ضربة بالنفير. مر من مؤخرة السفينة الشراعية.		Do not alter course. The other launch will keep clear of you. لا تغير الاتجاه. سيبتعد الزورق الآخر عن طريقك.
Alter course to Port. Give 2 blasts on horn. Pass under stern of dhow. غير الاتجاه نحو اليسار. اعط ضربتين بالنفير. مر من مؤخرة السفينة الشراعية.		Alter course to Stbd. Give 1 blast on horn. Pass other launch to Port. غير الاتجاه نحو اليمين. اعط ضربة بالنفير. اجتاز الزورق الآخر الى اليسار.

FLAG AND LIGHT SIGNALS

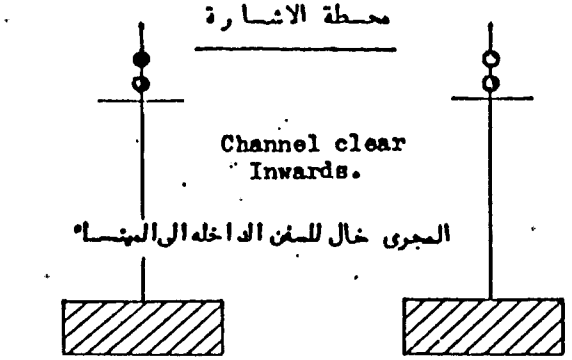
Now follow some of the flags and coloured light signals you will see in the harbour, with their meanings.

اشارات العلم والضوء

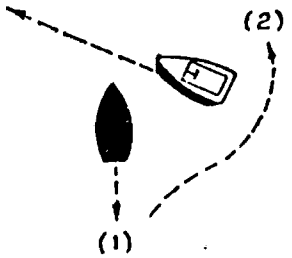
والآن اتبع بعض اشارات العلم والضوء الملون التي ستراها في الميناء بمعانيها وما تدل عليه .

Signal Station

محطة الاشارة

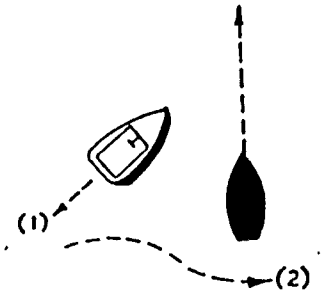


13



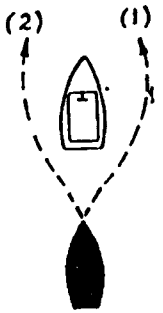
Slow down, stop or go astern until other launch is clear.
If going astern give 3 blasts on horn.

خفف السرعة . قف او اتجه الى الوراء حتى يعبر الزورق الآخر .
عند الاتجاه الى الوراء اعط ثلاث ضربات بالنفير .



Do not alter course or speed. The other boat will keep clear of you.

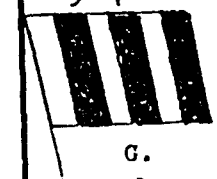
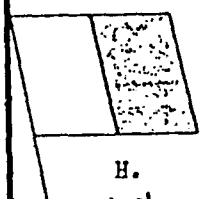
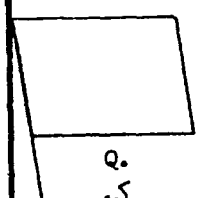
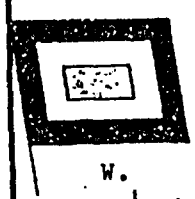
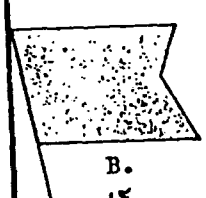
لا تغير الاتجاه او السرعة .
سيبتعد الزورق الآخر عن طريقك .

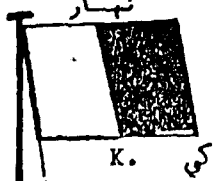
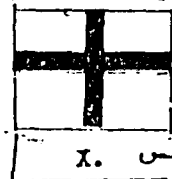
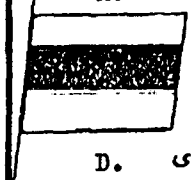
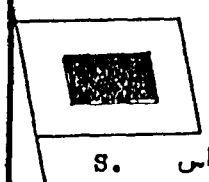
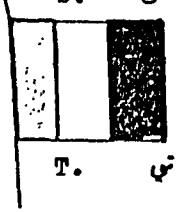
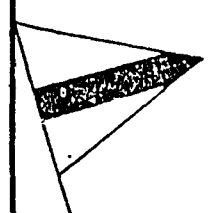


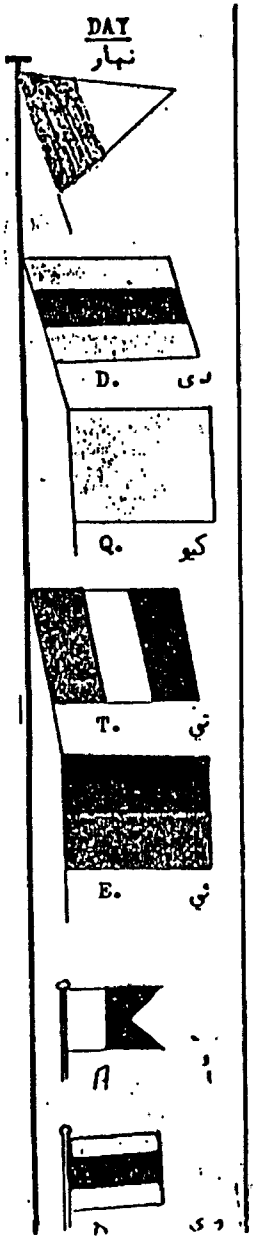
When overtaking keep clear of the other boat. Give 1 blast on horn if going to Stbd, 2 blasts if going to Port.

عند تجاوزك الزورق الآخر تنحى بعيدا عنه . اعط ضربة بالنفير عند الاتجاه نحو اليمين وضربتين عند الاتجاه الى اليسار .

12

DAY نهار	NIGHT ليل		
 G. جي	● ○ ●	Vessel requires Pilot. سفينة تتطلب مرشدا	
 H. اتش	● ○ ○ ● OUT خارج IN داخل	Vessel has Pilot on Board. سفينة على ظهرها مرشد .	
 Q. كيو	● ● ●	Quarantine - Vessel requires pratique. حجر صحي - سفينة تتطلب براءة الحجر الصحي (كرنتينة)	
 W. دبل يو	● ○ ○	Vessel requires a doctor. سفينة تتطلب طبيبا .	
 B. بي	○	Vessel is carrying explosives. سفينة تحمل في باطنها متفجرات	

DAY نهار	NIGHT ليل	
 K. كي	● ●	K.X.D. Vessel is carrying Pilgrims. كي . اكس. دى سفينة تحمل على ظهرها حجاجا .
 X. اكس		
 D. دى		
 S. اس	○ ● ●	S.T. اس. تي Vessel requires the Police. سفينة تتطلب الشرطة
 T. تي		
	○ ●	3rd Substitute Vessel entering. استعاضة رقم ٣ سفينة داخلة



NIGHT
ليل

DIVERS
LAUNCH

SURVEY
LAUNCH
قارب المسح

2nd Substitute.
Vessel Leaving.

استعاضة رقم ٢
سفينة مغادرة .

D.Q. دي . كيو

VESSEL HAS A FIRE ON BOARD.

في السفينة حريق .

T.E. تي . ي .

Pass slowly.

When a vessel is flying this signal go past very slow - divers may be down.

يبطئ . وعندما يرفرف هذا العلم
يبطئ شديد اذ ربما يوجد غواصون
تحت البحر .

I have a diver down.
Keep well clear at slow speed .

غواص تحت الماء ابتعد عني وخفض سرعتك

Keep Clear of me I am manoeuvring with difficullty .

ابتعد عني أنا أناور بصعوبة .

Now for a few DON'TS :-

You must know where NOT to anchor your craft.

1) NOT in any of the channels or you will be in the way of shipping.
2) NOT inside the line of Oil Buoys either on the South or Nourth sides of the Inner harbour or you may damage the pipe lines.
3) Not in the Oil Harbour.

If you are going to the Oil Harbour

1) Your launch must NOT be an outboard or driven by petrol.
2) You must NOT have oil lights and NO hurricane lights.
3) You must NOT smoke and you will collect all the matches and lighters from your crew.
4) You must NOT cook and if you are on a tug all galley fires must be put out.

In the Inner Harbour :-

1) You must NOT go on board a ship flying the Quarantine flag.
2) You must NOT go alongside a ship flying the dangerous cargo flag if your launch has a petrol engine or oil lights.

YOU MUST KEEP OUT OF THE WAY OF ALL SHIPS.

Form E.

Certificate of Competency as Person In-Charge of a Mechanically propelled Craft.

(Under Rule 95 (2) A of the Aden Port Rules)

(Valid for the Port of Aden only.)

To, Sample.

WHEREAS it has been reported to the Port Officer that you have been found after examination qualified to fulfil the duties of person In-charge of a mechanically propelled Craft in the Port of Aden, you are hereby granted this Certificate of Competency as such Person in charge.

Serang's left Thumb print

Height .....

Personal marks for identification .....

N.B.—Any person other than the owner thereof becoming possessed of this Certificate is required to transmit it forthwith to the Port Officer, Aden.

No. ..... of 19.....

Port Office,

Aden ..... 19.....

.....

PORT OFFICER, ADEN.

Certificate of Competency as Engine-Driver of a Motor Launch or Tug (Cancel as required)

(Under Rule 95 (2) B of the Aden Port Rules)

To, SAMPLE

WHEREAS it has been reported to the Trustees of the Port of Aden that you have been found qualified to fulfil the duties of Engine - Driver of a ..... you are hereby granted this Certificate of Competency.

Engine - Driver's left Thumb print

Height.....

N.B.—Any Person other than the owner thereof becoming possessed of this Certificate is required to transmit it forthwith to the Port Officer, Aden.

No.....of 19.....

Port Office,

Aden.....19.....

Port OFFICER & DIRECTOR
OF MARINE AFFAIRS.

D.H./35008/5x100x2/1-86

PORT OF ADEN AUTHORITY

—o—

PILOT'S LICENSE

No._____ of 19___

To,

Mr. SAMPLE

WHEREAS it has been reported to Director of the Port of Aden Authority that you have been examined in accordance with the Rules framed under Section 47 of the Port Trust Ordinance 1955 and have been found duly qualified to perform the duties appertaining to the office of a Pilot for the Port of Aden, we do hereby license you, the said Mr. _____ *as a pilot, and authorise you, subject to the orders of the Port Officer and the Officers of his Department, to perform the duties of a Pilot for the Port of Aden from and after the* _____ *day of* _____ *19*___

Given under our hands and Seal at Aden, this _____ *day of* _____ *19*___

Pilot's Signature _____ _____ *Director General.*

Pilot's Address _____

Date and Place of Birth _____ _____ *Director of the Board of Port of Aden*

Date of Original Appointment as Pilot _____

Registered and issued at the Port Office

Aden, this _____ *day of* _____ *19*___ _____

_____

PORT OFFICER, ADEN.

APPENDIX 2 - MARINE PERSONNEL IN THE PORTS OF ADEN, MUKALLA AND NISHTUN

MARINE PERSONNEL	PORT OF ADEN		MUKALLA	NISHTUN	TOTAL
	Inner Harbour	Oil Harbour			
Port Officer	1	-	-	-	1
Harbour Master	1	-	-	-	1
Assistant Harbour Master	1	1	1	1	4
Marine Superintendant	-	1	-	-	1
Pilot	13	-	-	-	13
Port Controllers	7	-	1	-	8
Shore Bosun	1	-	-	-	1
Tugmaster	25	9	1	-	35
Serangs(Assistant Tugmaster)	20	8	1	-	29
Tug Engine Driver	20	8	1	-	29
Tug Greaser	40	8	2	-	50
Pilot Launch Helmsman(Succani)	15	-	1	-	16
Pilot Launch Engine Driver	15	-	1	-	16
Mooring Boat Helmsman	20	8	1	-	29
Mooring Boat Engine Driver	20	-	-	-	20
Ratings(Tugs and Mooring Boat)	155	48	9	-	212
	354	91	19	1	465

APPENDIX 2(a)

SUMMARY OF NATIONAL SEAFARERS ON BOARD NATIONAL FLEET

SEAFARERS	YNL	ARC	TOTAL
Masters	3	1 *	3
Chief Officers	2	1	3
2nd Officers	2	1	3
3rd Officers	4	1	5
Radio Officers	1	1	2
Chief Engineers	4	1 *	4
2nd Engineers	2	1	3
3rd Engineers	3	1	4
4th Engineers	1	1	2
Electricians	3	1	4
Bosuns	3	1	4
Deck Ratings	12	9	21
Engine Ratings	10		10
Cooks	3	1	4
Stewards	3	2	5
Total	56	21	77

* Expatriates not counted

APPENDIX 2(b)

SUMMARY OF THE HARBOUR CRAFT IN THE PORTS OF ADEN, MUKALLA AND NISHTUN

1. Port of Aden - Inner Harbour

Conventional tugs	2
VSP Tugs	3
Pilot launchs	3
Mooring boats	5
Dredger for harbour works	1
Hopper barge for dredged spoil	2
Floating crane (30 tons)	1
Small tugs for towing cargo barges and water barges	6
Motor boats for shifting cargo labourers from and to shore, to and from ships	4
Passanger boats for ship's passangers and ship's crew from and to shore	3

2. Port of Aden - Oil Harbour

Conventional tugs	1
VSP Tugs	2
Mooring boats	2
Motor launch for combatting pollution	1

APPENDIX 2(b) (cont.)

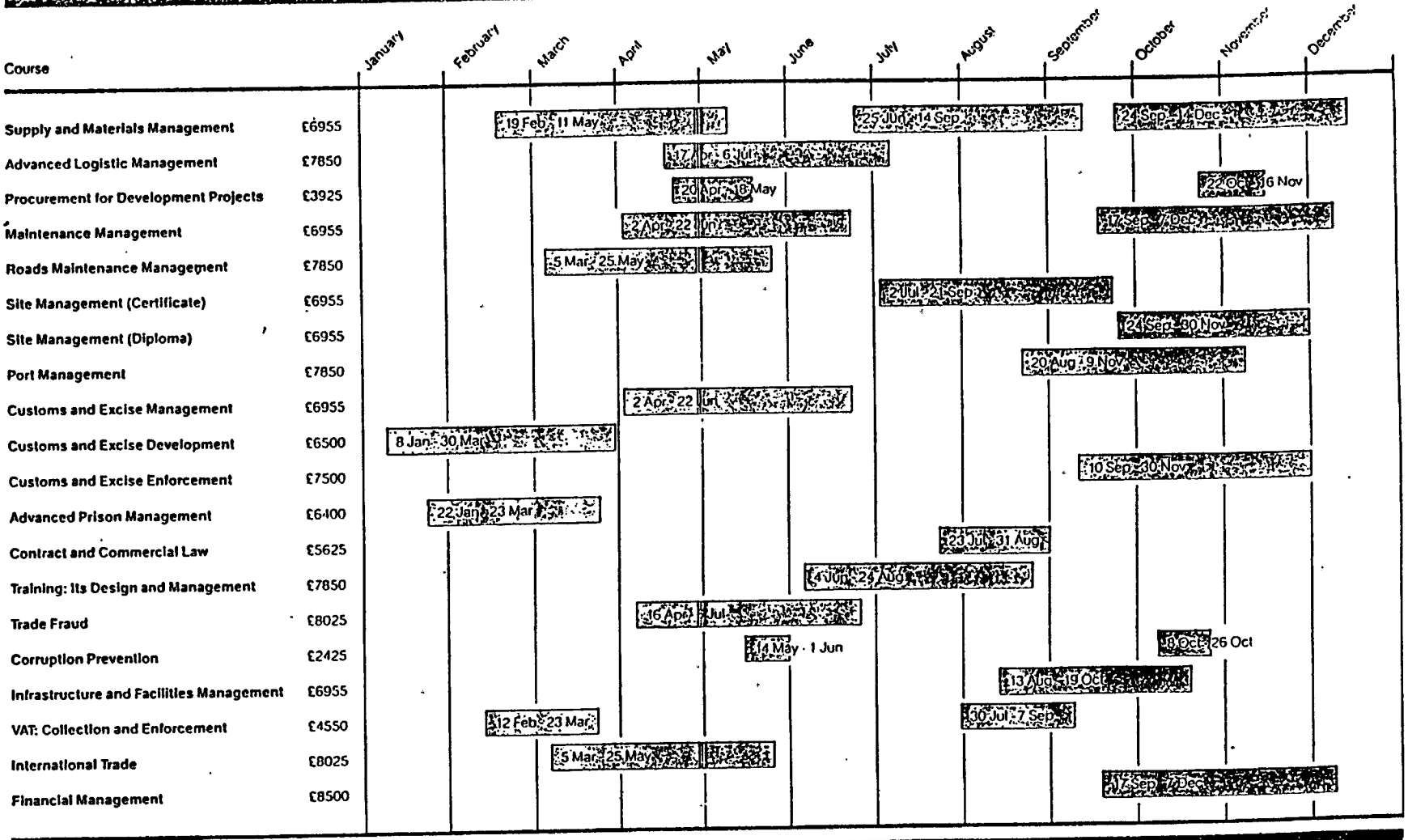
3. Port of Mukalla

VSP Tug	1
Pilot launch	1
Mooring boat	1

4. Port of Nishtun

Nil

Training courses in the United Kingdom 1990



* Fees for courses in the United Kingdom cover • tuition • full board accommodation • course notes • text book allowance • course-related travel • any industrial attachments that form part of the course.

APPENDIX 4

5.4.1 Pilot Launch and Mooring Boat Crew Training

.5	Contents of the Course:	Hours
.1	**Seamanship**	
.1.1	The meaning of common nautical terms	4.0
.1.2	Knots and lashings	4.0
.1.3	Types of ropes, care of ropes, characteristics of synthetic and natural ropes	2.0
.1.4	Splicing of ropes and wires	6.0
.1.5	Safety harness and its use	2.0
.1.6	Cleaning and maintenance of vessels, materials to be used	2.0
.1.7	Safety clothing to be used on board	1.0
.1.8	Rigging of pilot ladder and ship's gangway safety requirements	3.0
.1.9	Ship's freeboard, draft and reading the draft	2.0
.1.10	Taking the sounding of the tanks	1.0
.1.11	Safe working practice	3.0
		30.0
.2	**Anchor and Anchoring:**	
.2.1	Types of anchors	3.0
.2.2	Chains, shackles and marking of chains	3.0
.2.3	Anchor windlass. Preparation of dropping and heaving up anchor	5.0

APPENDIX 4 (Cont.)

.2.4	Anchor stoppers and stoppers for fastening ropes	2.0
.2.5	hand leadline, its marking and how to take a cast	3.0
.2.6	Anchoring manoeuvres, length of chains	6.0
		15.0
.3	**Navigation and buoyage:**	
.3.1	Steering courses)	15.0
.3.2	Steering commands, procedures)	
.3.3	Local and international buoyage system	5.0
.3.4	Local lights and shapes in the port	2.0
.3.5	Characteristic of lights and its sequences	3.0
		25.0
.4	**Berthing System in the Port:**	10.0
.4.1	Types of berths in the port: quays, dolphins, buoys	
.4.2	Berthing	
		10.0
.5	**Boat Handling**	
.5.1	Types of boats	2.0
.5.2	Propellers and their characteristics: single screw, twin screw and direction of	

APPENDIX 4 (Cont.)

	rotation	5.0
.5.3	Approaching alongside a ship at sea	1.0
.5.4	Towing other boats	2.0
		10.0
.6	**Steering Certificate**	15.0
.7	**Pollution**	
.7.1	Types of pollution	6.0
.7.2	Knowledge of local regulation concerning pollution prevention	2.0
.7.3	Action to be taken in case of pollution event	2.0
		10.0
.8	**Colreg**	
.8.1	Rules of the Road	30.0
.9	**Communication**	
.9.1	Flag signals and their meaning, single flag codes	2.0
.9.2	Use of VHF	10.0
.9.3	Distress signals	3.0
		15.0
.10	**English Language and Naut. English**	30.0
	Total	190.0

APPENDIX 4A

4.4.2 Tugmasters Training Course:

.5 Contents of the Course:

.5.1 Seamanship and Shiphandling	Hours
.5.1.1 Ship and Tug handling	
.1 Types of ships and tugs	4.0
.2 Propeller's characteristics, turning circle and short circle	5.0
.3 Use of tugs, turning moments centre of pull, methods of pull, methods of towing and bollard pull	7.0
.4 Avoidance of capsizing)	
.5 Interaction between tug and ship)	7.0
.6 Dangers of bulbous bow,bow and stern thrusters, ship's propellers	5.0
	28.0
.5.1.3 Anchor and Anchoring	
.1 Anchoring manoeuvres	7.0
.2 Mooring with two anchors; standing moor, running moor	5.0
.3 Clearing a foul chain	5.0
	17.0

APPENDIX 4A (Cont.)

.5.2	**General Ship Knowledge and Stability**	
.1	General pumping arrangement of the tug, tanks, fire fighting system	1.0
.2	Taking the sounding of tanks and determine the quantity of tank contents	5.0
.3	Definition of ship's main dimensions (LOA, LBP, Breadth, Draft, Freeboard)	1.0
.4	Bulkheads, beams and frames	1.0
.5	Stresses	5.0
.6	Welding, riveting and precautions to be taken when such process are carried out	1.0
.7	General understanding of:	
	- displacement	2.0
	- deadweight	1.0
	- buoyancy	0.5
	- reserve buoyancy	1.0
	- trim	0.5
.8	Use of displacement and tons per centimeter immersion scales to determine weight of cargo or ballast from drafts of freeboard	5.0
.9	Loadline marks	2.0
.10	Effect of density of water on draft and freeboard	5.0

APPENDIX 4A (Cont.)

.11	Fresh water allowance (FWA)	1.0
.12	General understanding of:	2.0
	- centre of gravity	
	- centre of buoyancy	
	- metacentric height	
	- righting lever	
	- righting moment	
.13	Calculate the movement of the centre of gravity due to:	
	- loading / discharging	4.0
	- moving masses already on board	3.0
	- free surface of liquids	3.0
		44.0

.5.3	**Meteorology**	
.1	To read and correct a barometer (aneroid), barograph and thermometer,	2.0
.2	Barometer pressure; use of barometric observation in conjunction with weather signs	1.0
.3	Prevailing weather in the area during the year which effect on the port; currents in the port	5.0
.4	Waves and swell	2.0
		10.0

APPENDIX 4A (Cont.)

.5.4	**Navigation and Pilotage**	
.1	Thorough knowledge of the harbour approaches and harbour	6.0
.2	The lighthouses in the port limit, their characteristics and visibility	2.0
.3	Wrecks, shoals and any other dangers	1.0
.4	The ability to understand the marks, signs and abbreviations in the chart	4.0
.5	The International and local buoys in the channels in the harbour	5.0
.6	Depths in the channels, inside the harbour, at the berths and at the turning basin	3.0
.7	Under-keel clearance, squat	2.0
.8	The ability to find the UKC from the tide tables, chart and draft	5.0
.9	Currents	2.0
		30.0

.5.5 Navigational Practice

.5.5.1 Compass

.1	Courses and bearings	3.0
.2	Have a knowledge of the compass error	4.0
.3	Ability to fix and apply the compass error to courses and bearings	5.0
.4	Influence of wind and current	5.0
.5	The ability of fixing the position on the chart by taking cross bearings	5.0

APPENDIX 4A (Cont)

.6 Accuracy of fixes	2.0
.7 Dead Reckoning	2.0
	26.0

.5.5.2 Echo Sounder

.1 Basic principles of the echo sounder	2.0
.2 Use of the echo sounder	1.0
.3 Accuracy and precautions when using the echo sounder	2.0
	5.0

.5.5.3 Radar

.1 Fundamental principles of Radar	15.0
.2 The setting up, adjustment and function of controls	5.0
.3 Measurement of range and bearing	2.0
.4 Position Fixing and Anti Collision	21.0
.5 Accuracy and limitations of a Radar	2.0
	45.0

.5.6 Colreg:

.5.6.1 Rules of the Road	30.0

APPENDIX 4A (Cont.)

.5.7	**Communication:**	
.5.7.1	VHF communication	9.0
.5.7.2	Flag signal and their meaning	3.0
.5.7.4	Distress Signals	3.0
		15.0
.5.8	**Pollution:**	30.0
.5.8.1	Introduction about pollution and its effect upon the marine environment	
.5.8.2	Knowledge of local regulation concerning pollution	
.5.8.3	Action to be taken in case of pollution event	
.5.9	SAR	20.0
	Total	300.0

Port State Control

Part B: Course Outline

Subject Area	Hours	
	Classroom	Ship
1. Need for Control		
1.1 Provisions for port State control in IMO and ILO conventions	1.0	
1.2 Ships of non-parties	0.5	
1.3 Ships below convention size	0.5	
1.4 Identification of sub-standard ships or pollution risks	0.5	
1.5 Regional control	0.5	
1.6 Monitoring control	0.5	
	3.5	
2. Main Elements of the Convention Requirements		
2.1 Status of conventions	0.5	
2.2 SOLAS 1974	3.0	
2.3 LL 1966	1.0	
2.4 COLREG 1972	0.5	
2.5 STCW 1978	0.5	
2.6 MARPOL 73/78	2.5	
2.7 ILO 147	0.5	
	8.5	
3. Documentation		
3.1 Certificates and their supplements required under IMO conventions	2.0	
3.2 Record books	1.5	
3.3 Manuals	1.0	
	4.5	

Course Outline (contd.)

Subject Area		Hours	
		Classroom	Ship
4. Inspection of Ships			
4.1	Inspection related to SOLAS certificates	2.0	
4.2	Inspection related to the International Load Line certificate	0.5	
4.3	Inspection related to the IOPP certificate and oil record book	1.0	
4.4	Inspection related to the Certificate of Fitness, NLS certificate and cargo record book	1.0	
4.5	Inspection related to STCW 1978 documents	0.5	
4.6	Inspection related to COLREG 1972	0.5	
4.7	Inspection related to ILO conventions	0.5	
4.8	Inspection of COW operations	1.0	
4.9	Inspection of unloading, stripping and prewash operations on chemical tankers	2.0	
4.10	Investigation of alleged discharge violations	1.0	
4.11	Exemptions	0.5	
		10.5	
5. Action by the Port State			
5.1	Deficiencies	1.5	
5.2	Violations of the discharge provisions	0.5	
5.3	Reports	1.0	
		3.0	
6. Practical Port State Control Training			
6.1	Organization	1.0	
6.2	Aide-memoire for inspectors	1.5	
6.3	Safety	0.5	
6.4	Inspection practice		19.5
		3.0	19.5
	SUBTOTALS	33.0	19.5
	TOTAL	52.5	

Marine Accident and Incident Investigation

Part B: Course Outline

Subject Area	Hours	
	Lecture	Group activity
Course Introduction*	0.25	
1. International Obligations		
1.1 Conventions and protocols	0.5	
1.2 Convention provisions touching on accident investigation	1.5	
1.3 Resolutions and circulars	1.0	
	3.0	
2. Investigative Purposes and Procedures		
2.1 Purposes and types of investigation	2.0	
2.2 Initiation of investigation	2.5	
2.3 Documentary evidence	0.5	1.0
2.4 Physical evidence	1.0	
2.5 Examination of witnesses	1.5	
2.6 Records of testimony	1.5	9.5
2.7 Liaison with other authorities	0.75	
	9.75	10.5
3. Analysis of Evidence		
3.1 General aspects	0.75	
3.2 Technical aspects	3.0	
3.3 Human aspects	3.0	
3.4 Determination of sequence of events and causal factors	1.5	3.0
	8.25	3.0
4. Inquiry Reports		
4.1 Content of reports	1.5	
4.2 Attachment of documentary evidence	0.5	11.5
	2.0	11.5

* Not included in total number of hours.

Subject Area	Hours	
	Lecture	Group activity
5. Administration of Investigations		
5.1 Enabling legislation	1.5	
5.2 Appointment of investigators	1.0	
5.3 Guidance to investigators	1.0	
5.4 Informal inquiries	0.5	
5.5 Preliminary inquiries	0.5	9.0
5.6 Formal hearings	2.5	
5.7 The investigator's administrative role at formal hearings	0.5	3.0
5.8 The investigator's advisory role at formal hearings	0.5	
5.9 Appearance at a formal hearing	0.33	
5.10 Co-operation with other States	0.33	
5.11 Costs of inquiries and hearings	0.33	
	9.0	12.0
6. Findings and Recommendations		
6.1 Recommendations on standards	0.75	
6.2 Recommendations on research	0.25	
6.3 Dissemination of information	0.5	
6.4 Implications of investigation results	0.5	
6.5 Submissions to IMO	0.5	
	2.5	
7. Group Activity Case Studies		
7.1 "Engine-room Fire"		4.5
7.2 "Capsize"		6.5
7.3 "Grounding"		6.0
		17.0
SUBTOTALS	34.5	54.0
TOTAL	88.5	

MARPOL 73/78 – Annex I

Part B: Course Outline

Subject Area	Hours Classroom
Part 1	
1. Marine Pollution	
1.1 Historical development	1.0
1.2 MARPOL 73/78	0.5
1.3 Articles of MARPOL 73/78	0.5
1.4 Technical annexes	0.5
1.5 Reporting of incidents	0.5
	3.0
2. Annex I	
2.1 Oil	0.5
2.2 Principles of environmental protection	1.0
2.3 Special areas	0.5
2.4 Machinery oil and cargo oil residues	0.5
	2.5
3. Control of Oil Discharges from Machinery Spaces	
3.1 Oily wastes	0.5
3.2 Discharge provisions	1.0
3.3 Construction of and equipment for machinery spaces	1.5
3.4 Oily-water separators and ancillary equipment	1.5
3.5 Disposal of residues	0.5
	5.0
4. Documentation	
4.1 Oil record book	1.5
4.2 IOPP Certificate	0.5
	2.0
5. Miscellaneous	
5.1 Shore reception facilities	0.5
5.2 Force majeure	0.5
	1.0

Subject Area		Hours Classroom
Part 2		
1. Introduction		0.5
1.1 General		1.0
1.2 Environmental threat from oil tankers		1.0
1.3 Principles of preventing oil pollution from oil tankers		2.5
2. Control of Oil Discharges from Oil Tankers		1.0
2.1 Discharge provisions		1.0
2.2 Retention of oil on board		1.0
2.3 Segregated ballast tanks (SBT)		0.5
2.4 Clean ballast tanks (CBT)		1.0
2.5 Crude oil washing (COW)		0.5
2.6 Limiting the effects of accidents		0.5
2.7 Slop tanks		2.0
2.8 Equipment		0.5
2.9 Pumping and piping arrangements		1.0
2.10 Exceptions, exemptions, special situations		9.0
3. Documentation		1.5
3.1 Oil record book		0.5
3.2 IOPP certificate		2.0
	TOTAL	27.0

MARPOL 73/78 – Annex II

Part B: Course Outline

Subject Area	Hours Classroom
1. Introduction	
1.1 Chemical tankers	1.0
1.2 Liquefied gas tankers	0.5 1.5
2. Annex II Substances	
2.1 Principles	0.5
2.2 Division of substances	0.5
2.3 Hazard profiles	1.0
2.4 Categorization and ship type assignment	1.0
2.5 Updating the lists of substances	0.5
2.6 Inclusion of noxious liquid substances (NLS) in the BCH/IBC Codes	1.0 4.5
3. Discharge of Noxious Liquid Substances (NLS)	
3.1 Principles and definitions	0.5
3.2 Discharge provisions	1.0
3.3 Efficient stripping	2.0
3.4 Prewash operations	1.0
3.5 Ventilation procedures	0.5
3.6 Existing ships until 1994	0.5
3.7 Underwater discharge outlet	0.5 6.0

Subject Area	Hours Classroom
4. Unloading, Stripping and Prewash Operations	
4.1 Category A substances	0.5
4.2 Category B substances	0.5
4.3 Category C substances	0.5
4.4 Category D substances	0.25
4.5 Ballast containing not more than 1 ppm category B or C residue	0.25 2.0
5. Documentation	
5.1 Procedures and arrangements (P & A) manual	0.5
5.2 Cargo Record Book (CRB)	0.5
5.3 Certificates	0.5 1.5
6. Miscellaneous	
6.1 Shore reception facilities	0.5
6.2 Force majeure	0.5 1.0
TOTAL	16.5

APPENDIX 4E

4.4.8 Seafarers Course (Ratings)

.5 Contents of the Course

.1	**Basics of Seamanship**	Hours
.1.1	The meaning of common nautical terms	3.0
.1.2	The names and function of various parts of the ships	3.0
.1.3	Knots and lashings	3.0
.1.4	Types of ropes, care of ropes, characteristic of synthetic and natural ropes	2.0
.1.5	Splicing of ropes and wires	10.0
.1.6	Rigging of stages and use of bosun's chair	5.0
.1.7	Safety harness and their use	2.0
.1.8	Cleaning and maintenance of vessel, materials to be used	5.0
.1.9	Safety clothing to be used on board	1.0
.1.10	Rigging of pilot ladder and ships gangway safety requirements	5.0
.1.11	Ship's freeboard, draft and reading the draft correctly	3.0
.1.12	Ships mooring practice	5.0
.1.12	Safe working practice	3.0
		50.0
.2	**Anchor and Anchoring**	
.2.1	Types of anchors	2.0

APPENDIX 4E (Cont.)

.2.2	Chains, shackles and marking of chain	3.0
.2.3	Anchor stopper and stoppers for fasting ropes	2.0
.2.4	Anchor windlass; preparation for dropping and heaving anchor	3.0
.2.5	Anchoring manoeuvres, length of chains and anchor watch	5.0
.2.6	Sea anchor; its purpose	2.0
.2.7	hand leadline, its markings and use	2.0
		19.0
.3	**Lookout and Steering**	
.3.1	Steering; by compass and fixed objects	4.0
.3.2	Steering commands	2.0
.3.3	Type of steering system	3.5
.3.4	Changing over from autopilot to steering and vice versa	0.5
.3.5	Reporting the approximate relative bearing of sound signals, lights or other objects in degrees and points	2.0
.3.6	Functions of a lookout	2.0
.3.7	Characteristics of lights	4.0
		18.0

APPENDIX 4E (Cont.)

.4	**Ship and Boat handling**	
.4.1	Characteristic of the propeller; single screw and twin screw	4.0
.4.2	Approaching alongside a ship at sea	1.0
.4.3	Towing other lifeboat	2.0
.4.4	Beaching and landing	3.0
		10.0
.5	**Buoyage**	
.5.1	Local and International buoyage system	5.0
.6	**Cargo Handling and gears**	
.6.1	Safe stowage, loading, lashing and discharging	3.0
.6.2	Rigging derricks; lowering, raising and swinging	5.0
.6.3	Maintenance of block, hooks and runners	2.0
.6.4	Marking of the derricks	1.0
.6.5	S.W.L. of derricks, shackles, maximum strength of wires slings	2.0
		13.0

APPENDIX 4E (Cont.)

.7	**Collision Regulations**	30.0
.8	**Communication**	
.8.1	Use of internal communication alarm signal	1.0
.8.2	Flag signals	3.0
.8.3	VHF Communication	10.0
		14.0
	Total	159.0

Basic Fire Fighting

Part B: Course Outline

Subject Area	Hours	
	Lecture	Demonstrations
1. Introduction, Safety and Principles	0.75	
	0.75	
2. Theory of Fire		
2.1 Conditions for fires	0.25	
2.2 Properties of flammable materials	0.25	
2.3 Fire hazard and spread of fire	0.75	
2.4 Classification of fires and appropriate extinguishing agents	0.25	
	1.5	
3. Fire Prevention		
3.1 Fire prevention principles	0.25	
3.2 Ship construction arrangements	0.5	
3.3 Safe practices	0.75	
	1.5	
4. Fire Detection		
4.1 Fire and smoke detection systems	0.5	
4.2 Automatic fire alarm	0.25	
	0.75	
5. Fixed Fire-extinguishing Systems		
5.1 General	0.5	
5.2 Smothering effect systems: carbon dioxide (CO_2), foams	0.5	
5.3 Inhibitor effect systems: halogenated hydrocarbons (halon) and powders	0.5	
5.4 Cooling effect systems: sprinklers, pressure spray	0.25	
5.5 Emergency fire pump (cargo ships)	0.25	
5.6 Chemical powder applicants	0.25	
	2.25	
6. Miscellaneous Fire-fighting Equipment		
6.1 Fire hoses and nozzles		
6.2 Mobile apparatus	0.25	
6.3 Portable fire extinguishers	0.25	
6.4 Fireman's outfit	0.25	
6.5 Breathing apparatus		0.5
6.6 Resuscitation apparatus		
6.7 Fire blankets	0.25	
	1.0	0.5

Course Outline (contd.)

Subject Area	Hours	
	Lecture	Demonstrations
7. Ship Fire-fighting Organization		
7.1 General emergency alarm		
7.2 Fire control plans and muster list	0.25	
7.3 Communications		
7.4 Personnel safety procedures	0.25	
7.5 Periodic shipboard drills		
7.6 Patrol systems	0.25	
	0.75	
8. Fire-fighting Methods		
8.1 Knowledge of fire safety arrangements	0.5	
8.2 Fire alarms and first actions	0.5	
8.3 Fire fighting	0.5	
	1.5	
9. Fire-fighting Drills		
9.1 Small fires		1.0
9.2 Extensive fires		1.0
9.3 Drills in smoke-filled spaces		2.5
		4.5
10. Review and Final Assessment	3.0	
SUBTOTALS	13.0	5.0
TOTAL	18.0	

Personal Survival

Part B: Course Outline

Subject Area	Hours	
	Lecture	Demonstrations
1. Introduction, Safety and Survival		
1.1 Safety guidance	0.75	
1.2 Principles of survival at sea		
1.3 Definitions, survival craft and appliances	0.75	
2. Emergency Situations		
2.1 Types of emergencies		
2.2 Precautions		
2.3 Fire provisions		
2.4 Foundering		
2.5 Crew expertise	1.5	
2.6 Muster list and emergency signals		
2.7 Crew and emergency instructions		
2.8 Extra equipment and survival		
2.9 Abandoning ship – complications	1.5	
3. Evacuation		
3.1 Abandoning ship – last resort		
3.2 Personal preparation for abandoning ship		
3.3 Need to prevent panic		
3.4 Crew duties to passengers	0.75	
3.5 Crew duties – launching survival craft		
3.6 Master's orders to abandon ship		
3.7 Means of survival	0.75	
4. Survival Craft and Rescue Boats		
4.1 Lifeboats	2.25	
4.2 Liferafts		
4.3 Rescue boats	2.25	
5. Personal Life-saving Appliances		
5.1 Lifebuoys		
5.2 Lifejackets	0.75	
5.3 Immersion suits		
5.4 Thermal protective aids	0.75	
6. Personal Life-saving Appliances (Demonstrations)		
6.1 Lifebuoys		
6.2 Lifejackets		
6.3 Inflatable lifejackets		3.75
6.4 Immersion suits		
6.5 Thermal protective aids		
6.6 Personal survival without lifejacket		
6.7 Boarding survival craft		3.75

Subject Area	Hours	
	Lecture	Demonstrations
7. Survival at Sea		
7.1 Dangers to survivors	0.75	
7.2 Best use of survival craft facilities	0.75	
8. Helicopter Assistance		
8.1 Communicating with the helicopter		
8.2 Evacuation from ship and survival craft	1.0	0.5
8.3 Helicopter pick-up		
8.4 Correct use of helicopter harness	1.0	0.5
9. Emergency Radio Equipment		
9.1 Radiotelegraph installation for lifeboats		
9.2 Portable radio apparatus for survival craft	0.75	0.75
9.3 Emergency position-indicating radio beacons (EPIRBs)	0.75	0.75
10. Review and Final Assessment	1.5	
SUBTOTALS	10.0	5.0
TOTAL		15.0

APPENDIX 4(g)

APPENDIX 4H

4.4.12 Computer Training Course

.5 Contents of the course	Hours
.1 Introduction to computers	10.0
.2 DOS	20.0

.2.1 Using the Desk Operating System (DOS)
.2.2 Entering Disk Operating System (DOS) commands
.2.3 Directory Commands (Dir)
.2.4 Formatting a Diskette
.2.5 CLS Command
.2.6 Managing Data and Program Files on Disks
.2.7 Copy Command
.2.8 Rename Command
.2.9 Erase and DEL Commands
.2.10 Using Directories and Subdirectories
.2.11 Loading a Programme
.2.12 Exercise practice

.3 Word Processing Package	30.0

.3.1 Entering and Editing Text
.3.2 Using List Files
.3.3 Formatting Documents
.3.4 Using the Block Facility to

APPENDIX 4H (Cont.)

	Manage Text	
.3.5	Invoking Utility Features	
.3.6	Exercise Practice	
.4	**Database Package**	30.0
.4.1	Design of the Database	
.4.2	Creating and Maintaining a Database	
.4.3	Querying Data	
.4.4	Exercise Practice	
.5	**Spread Sheet Package**	30.0
.5.1	Developing and Using Worksheets	
.5.2	Using Graphs	
.5.3	Using Databases	
.5.4	Exercise practice	

	Total	120.0

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