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**WORLD MARITIME UNIVERSITY**

*Malmö, Sweden*

**FURTHER DEVELOPMENT OF  
MARITIME TRAINING IN THE  
MARSHALL ISLANDS**

By

**LARRY MULLER**

*Republic Of The Marshall Islands*

A dissertation submitted to the World Maritime University  
in partial fulfilment of the requirements for award of the degree

**MASTER OF SCIENCE**

in

**MARITIME EDUCATION AND TRAINING (NAUTICAL)**

*Year of Graduation*

**1993**

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the university.

(Signature).....

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*This manuscript is dedicated to  
my beloved late grandfather*



*Capt. Rudolph K. Muller*

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## ABSTRACT

The purpose of the paper is to establish the need for a fisheries and nautical training centre in the Marshall Islands for the training of fishing boat crews, merchant marine officers and ratings. An in-depth study of the current training facilities for fisheries and other maritime personnel is made. The study discusses the problems of the present training system and highlights the demand and job opportunities for Marshallese seafarers. 40

The paper identifies the need for better training and examination systems to upgrade present standards with the particular objective of achieving the safe and pollution-free operation of ships in Marshall Island waters. 41

A detailed description is provided of the proposed training programmes for fisheries and merchant marine personnel, together with the structural changes required for such developments. 40

As the current training centre is utilised to train fisheries personnel only, a proposal for expansion of the present fisheries training establishment is made in the paper with a view to incorporating training facilities for officers and ratings of merchant vessels. The proposal is aimed at meeting the requirements of various international maritime conventions and technological changes in the maritime field. 41

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## **LIST OF ABBREVIATIONS**

<b>BIMCO</b>	<b>Baltic International Maritime Council</b>
<b>DWT</b>	<b>Deadweight</b>
<b>EEZ</b>	<b>Exclusive Economic Zone</b>
<b>FMSC</b>	<b>Former Marine Studies Centre</b>
<b>FNTC</b>	<b>Fisheries and Nautical Training Centre</b>
<b>FTC</b>	<b>Fisheries Training Centre</b>
<b>FMT</b>	<b>Fisheries Mariculture Training</b>
<b>FSM</b>	<b>Federated States of Micronesia</b>
<b>GCV</b>	<b>General Cargo Vessel</b>
<b>GRT</b>	<b>Gross Tonnage</b>
<b>HP</b>	<b>Horse Power</b>
<b>IMO</b>	<b>International Maritime Organisation</b>
<b>ISF</b>	<b>International Shipping Federation</b>
<b>ITF</b>	<b>International Transport Works' Federation</b>
<b>MED</b>	<b>Marine Engine Driver</b>
<b>MIDA</b>	<b>Marshall Islands Development Authority</b>
<b>MIMRA</b>	<b>Marshall Islands Maritime Authority</b>
<b>MMAGG</b>	<b>Mehau Mida and Gotto Group</b>
<b>MMTB</b>	<b>Marshall Islands Maritime Training Board</b>
<b>SCBA</b>	<b>Self Contained Breathing Apparatus</b>
<b>SOLAS</b>	<b>Safety of Life at Sea</b>
<b>SPMC</b>	<b>South Pacific Maritime Training Code</b>
<b>STCW</b>	<b>Standard of Training, Certification &amp; Watchkeeping</b>
<b>T &amp; C</b>	<b>Ministry of Transportation and Communications</b>
<b>TELB</b>	<b>Totally Enclosed Lifeboat</b>
<b>UNDP</b>	<b>United Nation Development Programme</b>
<b>WMU</b>	<b>World Maritime University</b>



## **CHAPTER 1**

### **INTRODUCTION: THE PEOPLE AND INFRASTRUCTURE OF THE REPUBLIC OF THE MARSHALL ISLANDS**

#### **1.1 INTRODUCTION**

Maritime training in the Marshall Islands was established by the Government of the Republic of the Marshall Islands in September 1990 with the objective of providing training for Marshallese seafarers to satisfy the growing demand for them in both inter-island and international trade. Nevertheless, Maritime education and training within the Marshall Islands has not yet met the requirements of the International Convention on Standards for Training, Certification and Watchkeeping for Seafarers, 1978.

Consequently, in order for the Marshall Islands to comply with this convention, it is vital to upgrade the standard of training for Marshallese seafarers. Moreover, Marshallese seamen will benefit by finding employment on board foreign-going ships flying the Marshall Islands flag since shipowners are interested in employing only seafarers who satisfy the STCW convention standards.

The paper will investigate the maritime culture and background of the Marshall Islands and identify the difficulties and problems in the present system. It is intended to put forward plans to overcome the deficiencies in the training system and highlight ways in which new training facilities and programmes can be of great benefit to the Marshall Islands' people and to international employers. A core

element is the introduction of the provisions of the STCW 1978 Convention (as amended) to ensure that international standards are met.

After providing the reader with an historical sketch of the Marshall Islands, the early chapters consider the scope and need for maritime training in the Country. This is followed by an evaluation of the facilities required for fisheries and nautical training schemes. Proposals are developed and put forward for course schemes for the training of ratings and officers, and for specialized short preparatory courses for non-certificate Marshallese officers on board local trade vessels. Some of the new facilities proposed are based on the author's visits to training facilities in Australia, Germany and other similar institutions in Europe and the United States of America.

The author is confident that the proposals will contribute to the establishment of adequate training facilities and to the integration of the training system. The new system should provide not only training for fishermen, but also for merchant seamen in order to provide a better system of education and training for Marshallese seafarers.

A manpower study attempts to show the current demand and the projected demand for Marshallese seafarers, both locally and internationally. At present, the idea behind expanding the training centre facilities is to increase the annual intake of students to meet the new and future demand.

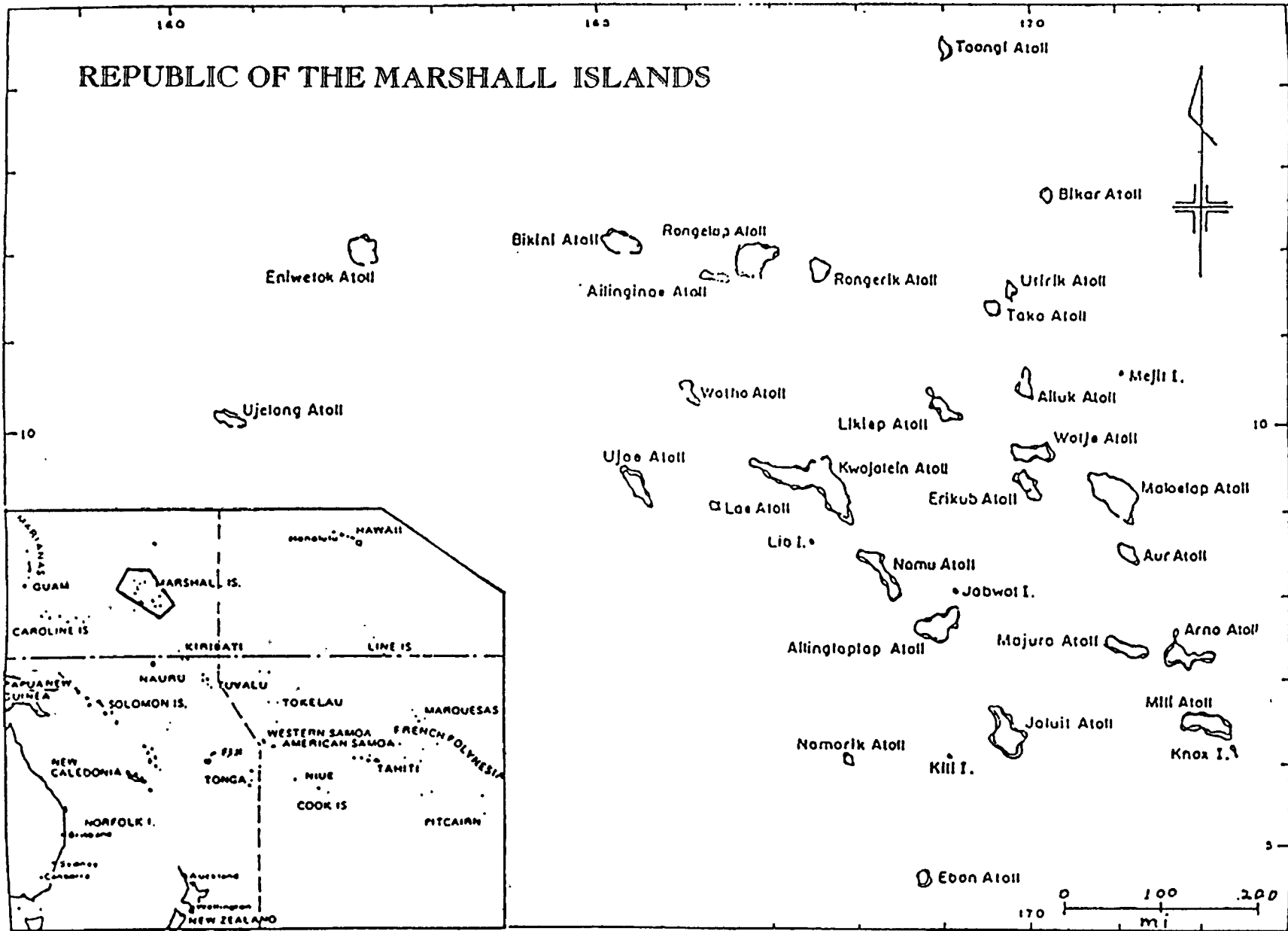
It is also increasingly important that the assessment of trainee skills be improved not only by improving the training facilities to permit this, but also by improving the examination and certification process to meet the standards demanded by the STCW Convention.

In this paper the intention is to examine the strategies that can be pursued to improve

the efficiency of the training programme to maintain its reputation as an efficient training centre in the Pacific region.

The Seventh Chapter presents the proposed Maritime Training Board for a Fisheries Nautical Training Centre. Finally the Eighth chapter makes some suggestions for changes in the current system. The final Chapter considers the changes to be made in the existing organizational structure, reinforcing the need to centre training standards around those of the international maritime community.

Figure - 1.1



MAP OF THE REPUBLIC OF THE MARSHALL ISLANDS

## **1.2 GEOGRAPHICAL LOCATION AND CLIMATE**

The Republic of the Marshall Islands consists of 29 atolls and 5 islands in the Central Pacific Ocean. Atolls vary in size from 6.33 square miles to a few square miles long and are spread over a sea area of 750,000 square miles. Only twenty-two atolls and one island are inhabited.

The Marshall Islands lie between 4 degrees and 14 degrees north of the equator and between 160 degrees and 173 degrees East, to the west of the International Date Line. The atolls and islands are grouped into two parallel chains: the Ratak chain (Eastern) and Ralik chain (Western). The total number of islands and islets within the atolls is approximately 1,225. The total land area of the Marshalls is 70 square miles.

Majuro, the capital of the Marshalls, is 2,136 miles west of Honolulu, Hawaii; 2,300 miles south east of Tokyo, Japan; 780 miles east of the Federated States of Micronesia (FSM); and 1,807 miles north of the Fiji Islands.

The climate is tropical, hot and humid with an average relative humidity of 81.3 percent (in Majuro). The average temperature throughout the year is about 81 degrees Fahrenheit (or 27.2 celcius) which can vary by up to 12 degree on any day. Majuro's average annual rainfall is 132 inches (or 335.3 cm.), October and November being the wettest months of the year. The average rainfall varies from 70 inches in the northern part of the Islands to 170 inches in the southern part.

The Marshall Islands are situated east of the major typhoon-prone Pacific areas, Nevertheless, because none of the island groups is more than few metres above the sea level, they are easily flooded during storms and tidal surges.

### 1.3 HISTORY

Most historians agree that the Marshallese people migrated from Southeast Asia. A mixed group of people known as the Austronesians settled a thousand years ago in New Guinea via Polynesia and eastern Micronesia, in which region the Marshall Islands are included. The people walked across the seas and crossed some open water to reach the Marshall Islands. Before the European explorers discovered the group, the Marshallese community was highly developed.

The first Europeans, who saw the Marshall group by accident, were Spanish navigators between 1526 and 1566. A Spanish expedition left Corunna (North West Spain) in July 1525 and came near the Marshall Islands. The first of these discoveries was made in 1526 by the Spanish Captain Toribio Alonzo De Salazar, who discovered the Toangi atoll (Bokaak atoll). The English Captain, Samuel Wallis, sailed through in 1767. The Russian lieutenant Otto von Kotzebue, the commander of the Rurick, passed through in January 1, 1817 and made friends with the two chiefs of Wotje and did some further exploration in the Pacific. Other discovery and exploration of the Marshall Islands are listed in Table 1.1 below.

The British sea captain William Marshall, after whom the group of islands is named, explored the group in 1788 in his ship "Scarborough," enroute from Botany Bay (Australia) to Cathay (China).

The first people to beach and live among the Marshallese were the European explorers. In the years 1820-50 came whalers from the United States and Great Britain. In 1857 the first protestant missionaries from Honolulu, Hawaii and Boston arrived at Ebon Atoll, in the southern part of the group, on the sailing ship Morning Star. Finally, German traders came in the late 19th century and claimed sovereignty over the Islands .

**TABLE 1.1 DISCOVERY AND EXPLORATION OF MARSHALL ISLANDS**

**RALIK CHAIN (WESTERN)**

<b>PLACE</b>	<b>DISCOVERER AND YEAR</b>
Eniwetak	Saavedra 1529*, Bond 1792, Butler 1794
Ujilang	Saavedra 1529*, <u>Providence</u> 1811*
Bikini	Saavedra 1529*, Kotzebue 1825 (Eschscholtz)
Rongerik	Walls 1767*, Kotzebue 1817
Rongelap	Saavedra 1527*, Wallis 1767
Ailinginae	Wallis 1767* (?), Kotzebue 1825
Wotho	Schantz 1835 (Schantz)
Ujae	<u>Ocean</u> 1804 (Margaret), Hammond 1853
Lae	<u>Ocean</u> 1804, <u>Morning Star</u> 1858 (Brown)
Kwajalein	Villalobos 1542*, P&M 1566*, <u>Ocean</u> 1804
Lib	Dennet 1797 (Princess)
Namu	Arelland 1564*, Bond 1792, Dennet 1797
Jabwot	Legaspi 1564*, Patterson 1809
Ailinglaplap	Bond 1792, Dennet 1797 (Lambert), Patterson 1809 (Elmore), Kotzebue (OJC)
Jaluit	Patterson 1809 (Banham), Duperrey 1823
Kili	Dennet 1797 (Hunter)
Namorik	Bond 1792 (Baring)
Ebon	Ray 1824 (Boston), Covell 1851

**RATAK CHAIN (EASTERN)**

Toangi	Salazar 1526* (San Bartolomeo), J Johnstons 1807 (Sibyllae), Hermit 1625 * (Galperico), Kotzebue 1817* (Cornwallis)
Bikar	G&M 1788 (Dawason), Farnham 1832
Utirik	Saavedra 1527*, Kotzebue 1816 (Kutusoff)
Taka	G&M (?) 1788, Kotzebue 1816 (Suworoff)
Mejit	Legaspi 1564* (?), Kotzebue 1817 (Neujahrinsel)
Ailuk	Legaspi 1564*, G&M 1788, Kotzebue 1817 (Krusenstern)
Jemo	Legaspi 1564*, Bishop 1799, G & M 1788, Kotzebue 1817
Likiep	Legaspi 1564*, G&M 1788, Kotzebue 1817,
Wotje	Villalobos 1542*, G&M 1788 (Chatham), Kotzebue 1817 (Otdia, Ramanzoff)
Erikub	P&M 1566*, G&M 1788
Maloelap	P&M 1566*, G&M 1788 (Calvert)
Aur	G&M 1788 (Ibbetson), Kotzebue 1817 (Traversy)
Majuro	G&M 1788 (Arrowsmith)
Arno	Legaspi 1564*, G&M 1788 (Daniel and Peddler), Kotzebue 1817
Mili	G&M 1788 (Lord Mulgrave)
Knox (Narik)	G&M 1788

\* Sources: Special Supplement, HOURGLASS DEC.10 1965

Notes: P&M - Pericon and Martin 1566

G&M - Gilbert and Marshall 1788, either or both.

\* Seen only. Ship name Underlined. Names given to islands are in parentheses.



## **1.4 HISTORICAL BACKGROUND OF TRADITIONAL NAVIGATION**

For many years, native navigators sailing canoes travelled between atolls and islands over an area of 750,000 square miles in the Central Pacific Ocean without a compass, map or sextant to direct their course. The distances between atolls and islands vary from 16 to 800 nautical miles, and the islands are covered by low trees and coconut palms which are difficult to see from sailing canoes from 2 miles away. However, these expert navigators could easily sail from one atoll to another successfully. They found their direction and position via wave patterns, the guiding stars, the wind direction, the flying patterns of different types of birds near the lands, cloud formations and many other indicators.

The sailing canoes were single hull type, made of large pieces of breadfruit tree wood sewn and glued together with an outrigger connected to make it steady. The largest canoes were about 50 feet long. However, today, these large canoes are no longer built; the only ones that exist are 20 to 30 feet in length exist.

Marshallese navigation methods used to be closely guarded family secrets in the early days. The knowledge could be only passed on orally from an expert to a chosen apprentice, if the permission was granted by the ruling chief of all the Marshall Islands. In those days and still today, the learner had to recognize signs, both in the sky and on the water.

According to Raymond Debrum (1962), the expert would take the apprentice out in a canoe, lay him on his back in the water, and tell him to float and relax so that he would get to know the feel of the waves and later to identify certain waves by sight.

The three swell patterns native navigators usually used for determining the distances between islands were the wave from the stern of a canoe "jeljelatai" which is about

20 miles from shore, the wave "jukai" which is the furthest from land, approximately 40 to 50 miles, and finally the wave "jolat ai" which is the wave closest to the lagoons.

Native navigators mostly used the other four swell patterns for course adjustment when approaching a land fall, that they could not see. These patterns were "Rear or Rilib", the 'Backbone Swell', the strongest wave from the east; "kaelib", A weaker and harder wave to detect, which is the western swell; "bundockeing", the weak swell from the north; and "bunkdockerik", the stronger swell from the south.

One of the traditional navigational tools was the "Stick Chart" known as "wabebe" made from material called "Kimij." The cowrie shells attached to these represented the atolls and islands (see Figure 1.2).

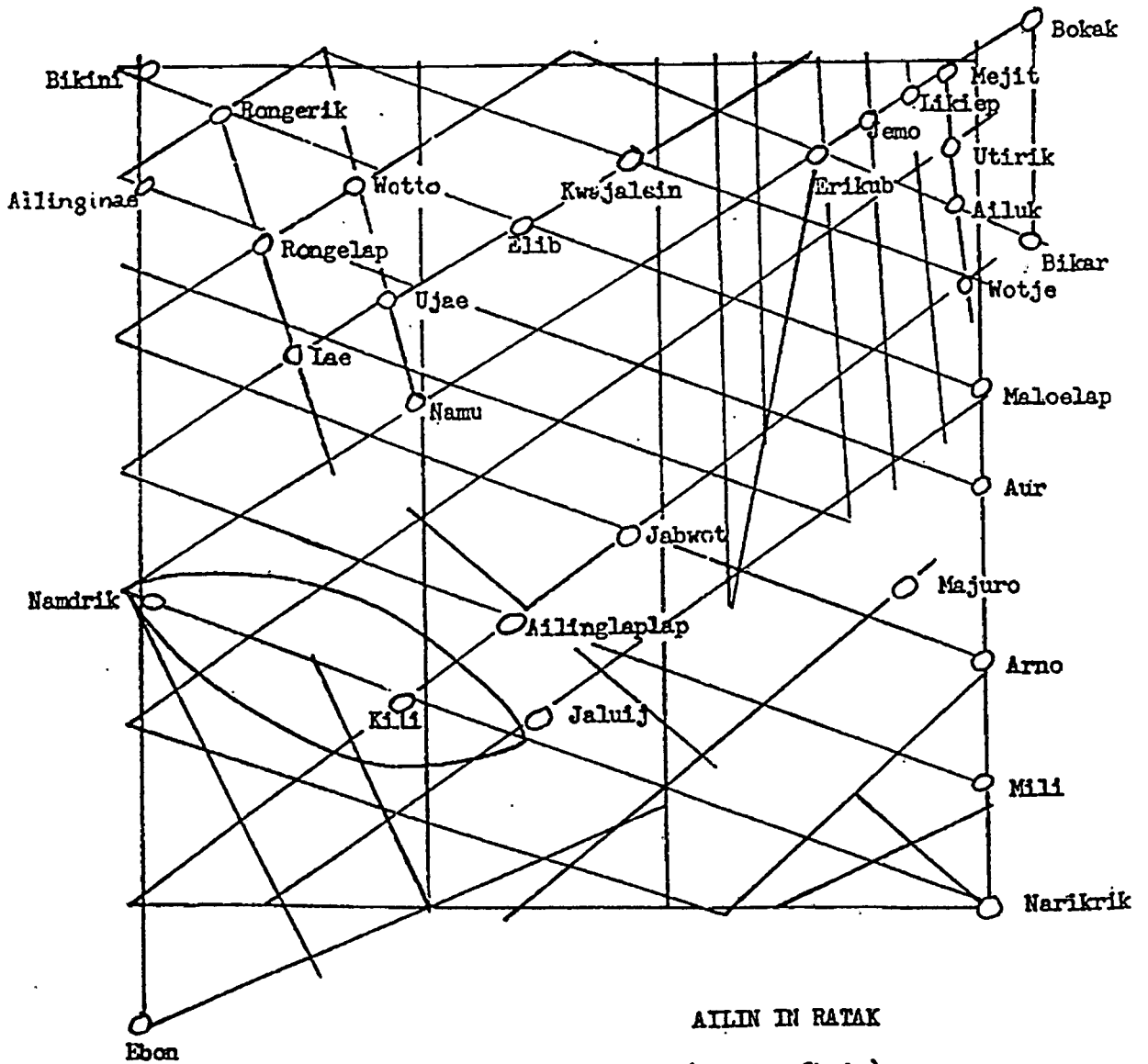
Many tourists like to buy stick charts as souvenirs and hang them on the wall for decoration. The stick chart (also known as sailing chart) has the interpretation of wave formations which many of the new generation of local navigators understand, but never use. Nowadays, it is mainly used by the handicraft industries.

This knowledge and skill has been declining and very soon it will no longer exist. Today, there are only a few men in the Marshalls who still can navigate by reading the wave, clouds, stars, etc.

Modern scholars studying these techniques have discovered that the guiding stars Marshallese navigators used for steering the canoes at sea have the same declination.

Figure - 1.2

STICK CHART OF THE MARSHALL ISLANDS  
WABEBE - NAVIGATION CHART



AILIN IN RATAK

(Sunrise Chain)

AILIN IN RELIK

(Sunset Chain)

## **1.5 GOVERNMENT**

The Republic of the Marshall Islands is an independent republic. It became a self-governing democracy in the year 1979, when the constitution became effective. The constitution was adopted by the Marshallese people in 1978, under which the Marshalls were designated as the Republic of the Marshall Islands.

Before the Republic of The Marshall Islands became a self-governing territory, it was a district of a UN trusteeship called the Trust Territory of the Pacific Islands, which was administered by the United States. This administration and these Trust Territory States came to an end in October 1986, when the Compact of Free Association came into effect.

The President of the Republic of the Marshall Islands, the head of the Nation, is chosen by his fellow elected Senators, and then other selected senators are selected by the President form a cabinet. The legislative power is vested in the Nitigela, which consists of 33 members elected from 24 electoral districts, each representing a group of atolls. The council of Iroj (Chiefs) has 12 members, and its principal function is to request a review by the Nitijela of any bill affecting customary law, traditional practice, or land tenure, and to express an opinion to the cabinet on any matter of national concern.

Today, there is a mix of nationalities in the country. Other nationals such as Americans Filipinos, Sri Lankans, Kiribatians, other East Asians to mention only few, and many other nationalities, have found employment and home in the Marshall Islands. This unity of people from different origins and cultures, especially Marshallese citizen, is symbolic of the peace and harmony in this stable, sovereign and democratic nation.

## **1.6 ECONOMY AND RESOURCES**

### **Fisheries**

The total area of the Exclusive Economic Zone (EEZ) of the Republic is approximately 1,942,500 sq km (750,000 square miles) of sea, which is bordered by Kiribati to the southeast, Nauru to the south, and the FSM to the west.

At present, U.S. and Japanese flag vessels are authorized to fish in the EEZ of the Republic of the Marshall Islands under an agreement with the government. However, the rapid growth of local and foreign fishing industry joint ventures with the Marshall Islands Development Authority (M.I.D.A.) is expected to increase the transshipment of fresh-chilled tuna to the Hawaiian and Californian fish markets.

Statistics for 1987-1991 show that, in terms of catch, a total of 53,972.4 metric tonnes of fish was caught by Japanese longliner and pole and line vessels. Additionally, a total of 6,231.2 metric tonnes was caught by other foreign fishing vessels in 1991. The major species caught in large quantities in the fishing grounds over the past years have been skipjack, yellowfin, bigeye, and blue marlin. Other species, such as swordfish, sailfish, black marlin, shark, have been caught in lesser quantities.

### **Industries**

The statistics of 1992, indicate that in 1991 the government copra processing plant, produced one thousand tons of coconut oil, and copra cake and earned US \$1,414 million. Other manufacturing plants expected to be constructed included a breadfruit chip plant and fish cannery plants. These will boost the exports of manufactured goods such as breadfruit chips and canned fish.

## **Overseas Trade**

The main countries from which the Marshall Islands imports products are the U.S.A. including its territories, Hawaii and Guam, Japan, Australia, Fiji, Hongkong, New Zealand, Phillipines, and Taiwan. The major imports are food and live animals, machinery, fuels and lubricants, crude materials, beverage and tobacco, chemicals, food oil. The major exports are crude coconut oil, live animals, frozen fish, trochus shells, copra cake, and handicrafts; Nevertheless, the trade has not been balanced: imports are still greater than exports.

## **Natural Resources**

High quality cobalt, manganese and other mineral deposits have been found in the seabed of the country's 200 mile EEZ. These large deposits have been confirmed by the geological surveys done by the United States and Germany in the past few years. As soon as proper technology is developed, the efficient exploitation of these could boost the economy.

## **Agriculture**

Breadfruit, pandaunas and coconut, the main crops that account for about half of the country exports, have been planted along the coasts and further inland on the Islands. Other crops such as chinese cabbage, etc are being developed as a cooperative efforts between China and the Marshall Islands. These crops are grown at Laura Farm, Majuro Atoll. Today, about half of the farm area is also occupied by farm animals such as pigs and chickens.

However, at present the principal economic activities are those relating to the production of coconut oil, torchus shell, and fishing. These account for about 3/4 of the country's total exports. The long-term lease of the existing U.S. military base on Kwajalein Atoll remains a mainstay of the economy. In addition, the ship registry business and the tourism industry bring in substantial foreign exchange each year.

## **1.7 THE POPULATION**

### **1.7.1 Growth and Distribution**

According to the 1988 census, the total population of the Republic was 43,380. The 1991 population was estimated to be 49,969. Based on the average annual growth rate of 4.0%, the population is expected to increase to 68,415 by the year 2000.

About half of the population live in the capital of the Marshall Islands, Majuro Atoll. It is estimated that 19% live on the Ebeye Islands in Kwajalein Atoll, while the remaining 31% are on the outer islands.

### **1.7.2 Employment**

#### **1.7.2.1 Current Situation**

Of the total population, over fifty-seven per cent of the Marshall Islands population is under 18 years of age. The school leaving population is high, resulting in a serious problem finding employment for the educated youth. The 1988 census indicated that 348 secondary school graduates were not gainfully employed and it is estimated that by the year 2000 the net amount of entrants in the labor market will double.

Consequently, today the government is making efforts to promote development projects to provide job opportunities for Marshallese on Majuro, Ebeye Kwajalein and the outer islands.

## **1.8 MAIN PORTS AND HARBOURS**

Majuro and Kwajalein are the major ports for discharging and loading general and bulk cargo.

**Majuro:** The port consists of 3 deep water berths at mean low water.

1. The biggest berth is located in Delap. Vessels up to 10,000 GRT can discharge bulk cargo. Minimum depth of the water is 38 feet.
2. The Fishing vessel berth is also located in Delap. It is used for discharging fish and loading provisions. Minimum depth of water is 25 feet.
3. Uliga old berth has been repaired. It is used for field trip ship loading operations and for the operation of fishing vessels. Minimum depth of the water is 25 feet.

**Kwajalein:** The port consists of 2 deep water berths: One in Kwajalein, and also Ebeye. The draught above 30 feet where vessels can discharge cargo and bulk.

Today, the Marshall Islands have become an important access and departure point for shipping services, between Hawaii, the Federated State of Micronesia, the South Pacific islands, and Japan. International vessels enter the Marshall Islands ports Majuro and Kwajalein. Moreover, the country also a crossroads for international airlines.



## **CHAPTER 2**

### **THE CURRENT STATE OF MARITIME TRAINING IN THE MARSHALL ISLANDS**

#### **2.1 BACKGROUND**

In 1988, The Government of the Marshall Islands requested the International Maritime Organization (IMO) Headquarters in London to assist in the establishment of a Marine Studies Programme in the country.

In the same year, for first time IMO Interregional Sectoral Support Consultants in Maritime Training (Deck and Engineering) visited the Marshall Islands and they recommended the establishment of a national marine cadet corps training centre. The consultants made their recommendation through the United Nations Development Programme (UNDP) for implementing the training programme.

The two specific objectives of the government in establishing the maritime training centre in the Marshall Islands were (a) to alleviate the increasing unemployment situation among secondary school graduates and (b) to meet the immediate demand for Marshallese crew on merchant ships - both inter-island and the foreign-going ships flying the Marshall Islands flag. Employment opportunities for Marshallese seafarers are expected to increase steadily in the future.

In 1990, the Marine Studies programme was implemented by the Ministry of Education and the Ministry of Transportation and Communications (T & C). The

school was established by making use of one of the existing boatyard training facilities at Majuro, Marshall Islands High School. In September 1990 the first group of high school early leavers and high school graduates entered the Marine Studies Centre and started their training. Courses such as seamanship and navigation were introduced corresponding to the secondary school level.

## **2.2 TRAINING PROGRAMME IN THE FORMER MARINE STUDIES CENTRE:**

### **2.2.1 Duration:**

The duration of the training programme was spread over a period of nine months. The nine-month period was split up into two training programmes: the six months were spent on theoretical classroom work and the second period involved a three-month seaman training course aboard ship to enable the participants to qualify as 'Dual Purpose Seamen' in compliance with IMO training convention standards (STCW Convention, 1978).

The training structure for the first six months generally included the following:

1. P.T. parade, discipline and routine
2. Swimming and lifesaving
3. Sailing, rowing and seamanship
4. Safe working practices
5. General ship knowledge
6. Personal survival and first aid
7. Fire-fighting and safety on board
8. General cleaning and painting

9. Hand tools, recognition, application and practice
10. Power tools, recognition, application and practice
11. Rope work and wire work
12. Inboard and outboard motors - operation and running
13. Engine room familiarization
14. Engine room watchkeeping and plant maintenance
15. Bridge familiarization
16. Steering and look-out duties
17. Derrick and lifting gear
18. Ship operation and maintenance.

During the three months on board ship, the trainees were expected to become familiar with the following:

1. Deckhand personnel: the duties and responsibilities of a deckhand onboard vessel, both in port and underway.
2. Engineroom personnel: the duties and responsibilities of an engineman with the main engine, auxiliary engine and all such motors and equipment used under deck and above deck.
3. Steward personnel: all duties and functions of catering, cabin services, and steward housekeeping.
4. General ship operation
5. General safety and accident prevention
6. Shipboard housekeeping and maintenance
7. Interpersonal skills, productivity, discipline, and work attitude
8. Life saving equipment
9. General deck seamanship
10. Mooring
11. Anchor, windless and stowage of cable

12. Cargo handling equipment
13. General deck work
14. Arrival and departure duties
15. Shipboard communication
16. Navigational watchkeeping duties
17. Fire fighting drills and first aid at sea
18. Helmanship and look out duties

During the past three years, the marine cadet corps training centre has produced about 100 qualified seamen.

In 1992, the Marshall Islands Marine Resources Authority (M.I.M.R.A.) established its fisheries training school in the Marshall Islands. This school merged into the maritime system and took over the full operation of the former Transportation and Communications Marine School for the purpose of providing necessary training for fishing crews only. In January 1993, fisheries training courses commenced to prepare students to become commercial longline fishermen for the Marshall Islands fishing fleets.

### **2.3 ORGANIZATIONAL STRUCTURE OF FISHERIES AND TRAINING CENTRE.**

The organizational structure chart for FTC is shown in Figure 2.1. The FTC is one of the divisions under the and responsibility of M.I.M.R.A. The Divisions of M.I.M.R.A. is as follows:

1. Fisheries Division
2. Mariculture Division

### 3. Resource Management/ Planning and Development

#### 4. Fisheries Training Centre

The Director determines the overall Divisions of M.I.M.R.A. The Head of the Fisheries Training Centre reports directly to the Deputy Director and Director of M.I.M.R.A.

The Head of the FTC is responsible for all administration and accounting, and also supervises the staff namely the fishing instructor, mechanic instructor, navigation/ seamanship instructor, and the secretary.

The institution's organizational structure chart consists of the following staff:

##### Teaching Staff:

- 1 instructor- fisheries
- 1 instructor- engine repair & Maintenance,
- 1 instructor- seamanship,
- 1 Principal

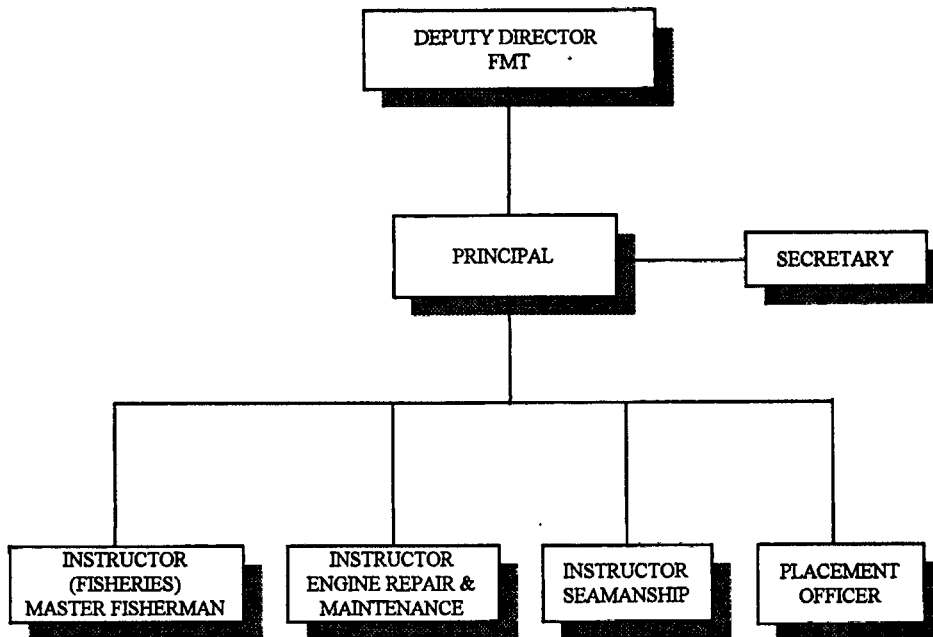
##### Non-teaching Staff:

- 1 placement officer.
- 1 secretary

The education level of the present staff is high. The instructor appears to have excellent theoretical background. At this stage, the present permanent staff comprises two instructors of whom one is an fisheries instructors from Indonesia and one local seamanship instructor. The permanent staff, however, suffer from high degree of instability.

Figure - 2.1

## Organizational Structure of the Fisheries Training Centre



\* FISHERIES, MARICULTURE, TRAINING

### 2.4 CURRENT EDUCATIONAL SYSTEM

The present (1992) Fisheries Training Centre course structure is designed to provide 3 months of basic theoretical training followed by 3 months of practical sea-going training on board fishing vessels. The theoretical training covers the curriculum for

fisheries both-deck and engine ratings. The curriculum has been developed by Asian Development Bank consultants together with the staff to meet the demand of Marshall Islands fishing fleets. After the completion of the first 6 months, the students proceed on to the sea for three more months practical training. On successful completion of the final three-month course, the students will be employed onboard Marshall Islands fishing vessels.

## **2.5 FISHERIES TRAINING CENTRE ADMISSION REQUIREMENTS**

The entry requirement is that candidates should pass their eight grades or high school. Candidates are required to fill an enrolment form and be interviewed for admission. Admission is controlled by the Fisheries Training School under the responsibility of M.I.M.R.A. Education is financed by the government through the M.I.M.R.A. Education and tuition are free.

At present, there are no medical examination or minimum age admission requirements that will meet the STCW Conventions standards for these aspects.

However, at this stage the school is offering two different courses at the same time with the aim of promoting and improving the fishing industries. The courses offered are as follows:

- 1) Fisheries
- 2) Seamanship

The Engine Repair and Maintenance training programme has not yet been carried out at the FTC. The fact is that an engine workshop has not yet been established to provide training for Marshallese engineers.

## **CHAPTER 3**

### **PROBLEMS OF THE PRESENT TRAINING SYSTEM AND FACILITIES**

#### **3.1 STANDARDS**

The Marshall Islands which have already ratified the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW), have not yet established proper maritime education and training facilities, or adequate examination and certification systems.

It is in the interest of the Republic to adhere to the STCW convention requirements. One advantage of such adherence is that the Marshall Islands Certificates will be fully acceptable internationally by other countries who are parties to the convention. However, in order to implement the STCW convention requirements, which will lead the country toward proper training and examination facilities and the certification of ship masters, officers, engine and other maritime personnel, the country must provide adequate training facilities.

The STCW Convention lays down broad certification and qualification requirements, including syllabuses and sea time for senior officers and all officers and ratings involved in watchkeeping. All such seafarers are required to have a watchkeeping certificate endorsed in a uniform manner.

The author suggests that it is extremely important for the government of the Marshall



Islands to consider the importance of implementing the STCW convention.

### **3.2 EXISTING BUILDINGS AND FACILITIES**

At this stage, the FTC has only one classroom and one office accommodated in the former cabinet building. This shows that the training facilities for Marshallese seafarers have not been improved since the establishment of the maritime training centre in the country. The teaching equipment and facilities are very limited. Therefore, the FTC is unable to cover the key subjects to meet STCW convention requirements.

The students do not have text books; they usually take notes in class. This is highly unsatisfactory and it undoubtedly has a negative impact on the quality of learning. The school should consider it a necessity that the students are provided with the relevant textbooks. However, the author suggests that the government should consider developing the training facilities and provide teaching equipment as well as textbooks to improve the standard of training in the future.

If the government of the Republic of the Marshall Islands wishes to attract the attention of local and foreign shipowners to recruit Marshallese seafarers in the future, it should take steps now to ensure that the school is provided with the necessary buildings and facilities. The training centre may not survive due to the fact that domestic and international vessels will only employ those seafarers who satisfy the requirements of the STCW Convention.

It is apparent that the location of the former cabinet building is admirably suited for providing training for Marshallese seafarers. It is near a lagoon, and it would be easy

to construct a small jetty, fitted with equipment such as davits, lifeboats and liferafts, so as to conduct practical training for survival at sea, boat maintenance, and boathandling.

See Chapter 7 for further details of the training facilities urgently needed to establish compliance with the STCW Convention.

### **3.3 ADMISSION REQUIREMENTS**

The current FTC entry requirements do not comply with the STCW Convention minimum admission requirements. The problems involved are as follows:

- The enrolment application form for the Fisheries Training Centre, does not specify the minimum age requirement for candidates.
  
- It does not include medical requirements.

M.I.M.R.A. has invested considerable funds to establish the Fisheries Training Centre to train Marshallese fishermen. No medical standards have been required for candidates. The investment M.I.M.R.A. has spent will be wasted in the future if candidates are found to be physically unfit to serve onboard local and foreign vessels. Therefore, to avoid such problems, the candidates should be medically checked by the Ministry of Health and Environment or by other appropriate medical personnel and be declared medically fit for admission.

### **3.4 THE PRESENT SITUATION**

#### **3.4.1 Fire Fighting Training**

The present fire fighting training is not up to international standard. In the last two years, the students have been trained onboard Government Micro Class ships. Small scale fire fighting training has been performed on board the Micro Class ships, and students have been taught how to use different types of fire fighting equipment onboard these vessels. No exercises with real fires have been performed. Neither have exercises with breathing apparatus in a smoke filled compartment been performed. The reason behind this unsatisfactory training is the lack of necessary equipment and facilities.

The equipment belonging to the Micro class ships has been used for fire fighting training on board. However, this is not a good solution to recommend because of the due wear and tear of, and possibly damage to, the equipment belonging to the ship, which would compromise the safety equipment on board the ship in a real emergency in the future. The basic and advanced fire fighting at the FTC should be performed according to the International Maritime Organization Model Courses regarding these subjects. The training centre must acquire the necessary equipment and facilities to conduct fire-fighting training.

At this stage, the FTC still has no fire fighting building for training the students. In order to meet the international standards, Marshall Islands Marine Resources Authority should rectify this situation.

A fire fighting centre should be built in a suitable place, away from areas of population. The centre should consist of a mock steel deck house suitable for local fire and smoke drills. The concrete pad should have facilities for fighting oil fires.

The present plan to build this building beside the school, is not a good one as it is not a safe and suitable place. It will create great dangers for the surrounding area during fire exercises and the heavy smoke will cause inconvenience to the people of Delap. The author suggests that the fire fighting building be built in a safe and suitable place where heavy smoke will not disturb the neighbourhood. The sketches of the fire-fighting facilities needed are shown in Chapter 7.

### **3.4.2 First Aid Course**

So far (during the last 2 years) no first aid course has been given which satisfies the demands of the STCW convention. The author suggests that the IMO Model Courses regarding this subject be implemented.

The Ministry of Health and Environment could be supportive in the areas of first aid and emergency medical procedures. In order to reduce the school's cost of purchasing training equipment and hiring experts, the training centre should ask the Ministry of Health and Environment to release some of their qualified teaching personnel from its department of nursing to assist in this area.

It is known that the necessary equipment in the above mentioned area could be provided by this Ministry. The participation of this department would provide assistance in promoting the First Aid Course in order to satisfy the requirements of the STCW convention.

### **3.4.3 Training Vessels**

In the past, as part of the practical working experience in the former Marine Studies Centre training programme, the Centre (FMSC) made arrangements with the Marshall Islands Field Trip Inter-Island Coastal Fleet, and the "MARIMED"

Foundation Sailing Schooner placed students on board their vessel for work experience. These arrangements did not work out very well, due to the limited number of placement offered for summer places for a group of 10-15 students each year. This figure did not meet the total number of the FMSC training places required. However, the acceptance of the students onboard these vessels, has given them the seagoing experience.

The "MARIMED" Schooner, which offered a summer cruise for a group of 10-15 cadets each year, has left the Marshall Islands. The Marshall Islands Inter-Islands Field Trip Ships still have some berths for small groups of students to further their seagoing experience in cargo handling.

The FTC has not had a training vessel since it took over the full operation of the Marine Studies Centre. Consequently, in order to provide adequate practical training programmes for the student, the author suggests that the FTC must design and organize practical training programmes for the students on board fishing vessels active in the Marshall Islands waters. However, the school should make arrangements with the fishing companies that are interested in securing berths for FTC students.

At a later stage, if the arrangement does not work out between the school and fishing vessels companies, M.I.M.R.A. should acquire 1 fishing vessel for the training centre which should be able to accommodate 15 students each voyage, as it is the policy of M.I.M.R.A. to increase the number of fishermen trainees.

#### **3.4.4 General Education**

General education subjects such as English, and basic mathematics, which play a vital role in maritime training, have not been offered to the students of the former

and the present training centres.

At present, the students attending the Fisheries Training Centre are mainly high school early leavers and also high school graduates. The level of English of many of the students, especially the early leavers, is very poor. Some of these students have difficulties understanding the subjects presented by foreign lecturers at the Fisheries Training Centre. Consequently, to strengthen their English, mathematics and physics, the author has included these subjects in the curriculum development proposal in Chapter 5.

The primary objective of the general education subjects is to support the subjects in deck and engine training, so that the students will be able to use nautical charts and publications, understand meteorological information and messages concerning ship safety and operation, speak with foreign crews onboard ships, and transmit clearly in their communication with other ships or coastal stations.

#### **3.4.5 Finding Employment for the Former Graduates**

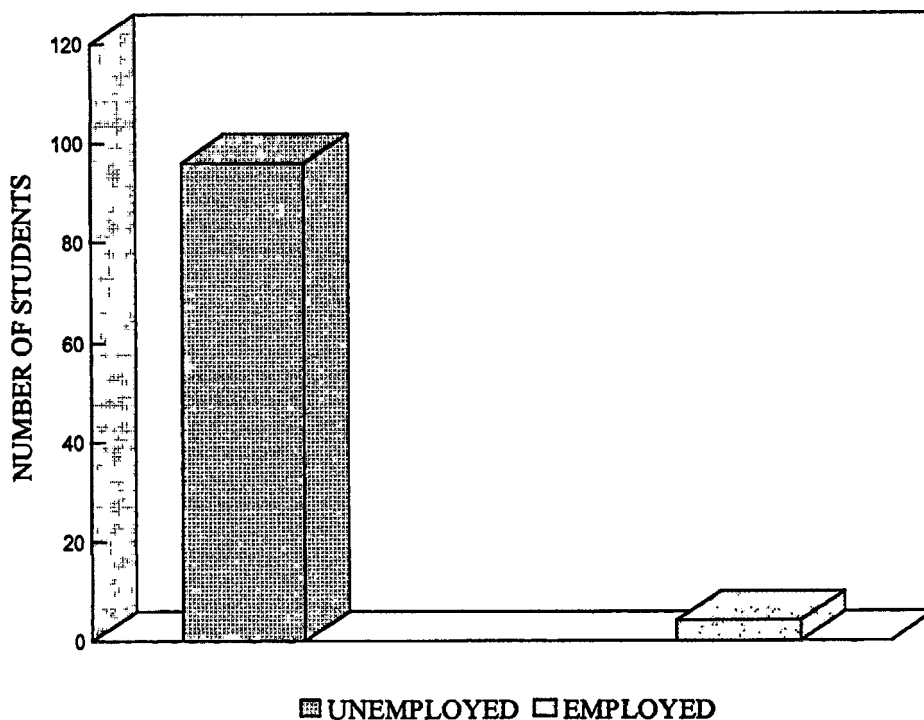
Since maritime training was started in the country, there has been a total of three batches totalling 100 qualified ratings who have completed the 6-month courses in the former marine studies centre. Out of this number of qualified students, 4 graduates or 4% are working aboard Micro Class Vessels, while the remaining 96 or 96% are still looking for employment onboard the Marshall Islands fleets (domestic trade and international trade).

In view of the above situation, there is a strong case for the government to develop employment opportunities for Marshallese seafarers on Marshall Islands flagged ships, which are expected to increase in number in the future. As yet there has been no recruitment agreement with the foreign-owned ships active in the country's

international and local trade. The author suggests that the government should impose a Maritime Act concerned with the employment of Marshallese national onboard these ships so that qualified Marshallese seafarers can be gainfully employed. This will alleviate the serious problem of finding employment for the Marshallese merchant trade cadets and ratings in the future.

Figure - 3.1

### Employed and Unemployed of the Former Marine Studies Centre Graduates (1990 -1992)



## **CHAPTER 4**

### **A RATIONALE FOR EXPANDING THE MARITIME TRAINING CAPABILITY IN THE MARSHALL ISLANDS**

The objective of this chapter is to provide a report on the current demand and to prepare a projection of the potential demand for Marshall Islands seafarers (a 5- year development plan) for the period 1993-1998. The primary means of obtaining this information has been through research and interviews of Marshallese and foreign shipowners and government agencies. A survey was developed to summarise the demands and job opportunities for Marshallese seafarers, and to identify problems as well.

The current demand for Marshallese seafarers by Marshallese and foreign shipowners is based on the following:

- The current total number of vessels active in the Marshall Islands waters by type, and size.
- The minimum manning levels for officers and ratings per type and size required by shipowners.

The projected number of Marshall flag vessels during 1993-98 is multiplied by the minimum manning levels shown in Appendix A for each of the following three categories:



- Deck officers
- Marine engineers
- Ratings (both deck and engine)

Based on the demand for Marshallese seafarers assumed in this report, there will be a substantial shortage of local certificated officers and ratings in the future in the commercial trade, if the present training centre continues to provide training for fisheries crews only.

Consequently, to meet the current and future demand for fishing vessel and general cargo vessel ratings, it is suggested that there is a need to expand the capacity of the present Fisheries Training Centre. As well, it will be necessary to establish a joint training system for commercial trades and fisheries training to support the future increase in qualified Marshallese seafarers.

## **4.1 DEMAND AND JOB OPPORTUNITIES : CURRENT SITUATION**

### **4.1.1 General Information on the Marshall Islands fleet:**

#### **a. Domestic trade**

The carriage of cargo on Marshall Islands vessels is very low, due to their limited carrying capacity. The Government vessels, capable of carrying cargo and passengers, are of the conventional type mainly used for the inter-island copra trade. Furthermore, most of the vessels were built during the years 1979-92 and are of a small size.

The Marshall Islands fleet consists of 29 ships, which are active only in the inter-island trade. Only 10 of the ships (34.48%) are general cargo, and the remaining 19 consist of 2 patrol boats and 17 fishing vessels which together represent 65.52% of the fleet. Since there is no oil and gas tanker available to service the outer-islands, most of the fuel is delivered to them by Government general cargo ships.

As for vessel size, all of the ships operating in domestic waters are under 1600 grt. The average carrying capacity of the fleet is approximately 780 D.W.T. Most vessels of the cargo fleet are below 780 D.W.T.

The oldest vessels in the Marshall Islands fleet are less than 22 years old; however, more than 85.7 % of the domestic trade ships are less than 14 years old. The average age of the Micro Class type dry cargo fleet (3 ships) is 14. Most of these vessels are operating within the Marshall Islands waters active only in domestic trade.

#### **Small fishing boats**

There are no reliable statistics but it is considered that the number of small outboard

motor boats in the Marshall Islands is somewhere between 500 and 1000. The local fishermen normally use these for fishing inside the 12- mile territorial waters in the Exclusive Economic Zone.

**b. International trade**

In 1988, the government of the Marshall Islands introduced a plan which allowed for foreign vessels to register in the country. The aim of the scheme was to raise registration revenue, and to increase the employment opportunities for Marshallese seafarers. At the end of 1992, a total of 44 foreign owned vessels of more than 1,640,699 grt had registered in the Marshall islands.

These facts show that the number of ships active in the international trade flying the country's flag,, has expanded over the last 4 years - from 1988-1992. The number of fishing vessels locally owned, including the fishing fleet for Mehau Mida and the Gotto Group (M.M.G.A.A.) and the other fishing companies is quickly expanding and they are expected to increase their fleet size.

**TABLE 4.1 INTERNATIONAL TRADE FLEET STRUCTURE, 1992 NO. OF SHIPS**

<b>TYPE OF VESSEL</b>	<b>No</b>	<b>GRT</b>
All Other Vessels	34	383,294
Tanker	10	1,157,405
<b>TOTAL</b>	<b>44</b>	<b>1,640,699</b>

**\* Source: Trust Company statistical report for the Month of December 1992.**

**TABLE 4.2 DOMESTIC TRADE FLEET STRUCTURE, 1992. NO. OF SHIPS**

The figures below are indicate the number of various types of ships in operation within Marshall Islands waters.

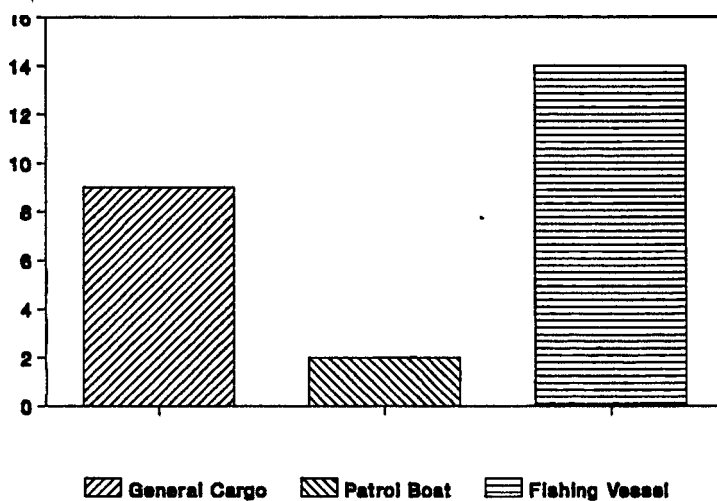
Type of vessel	International	Domestic	Total
General Cargo	None	12	12
Patrol Boat	None	2	2
Fishing Vessel	None	15	15
Size of vessel			
-under 100	None	15	15
-100 - 150	None	8	8
-150 - 350	None	1	1
-350 and over	None	5	5
Age of vessel			
-22 years & over	None	2	2
-22 - 10	None	9	9
-10 - 5	None	13	13
-5 and under	None	5	5
Routing			
-Domestic trade	All of the above		
-International	None of the above		

**\*Source: Ministry of Transportation and Communications, Ministry of Resources and Development, Sea Patrol Base of the Ministry of Justice, local shipowners, other fishing companies.**

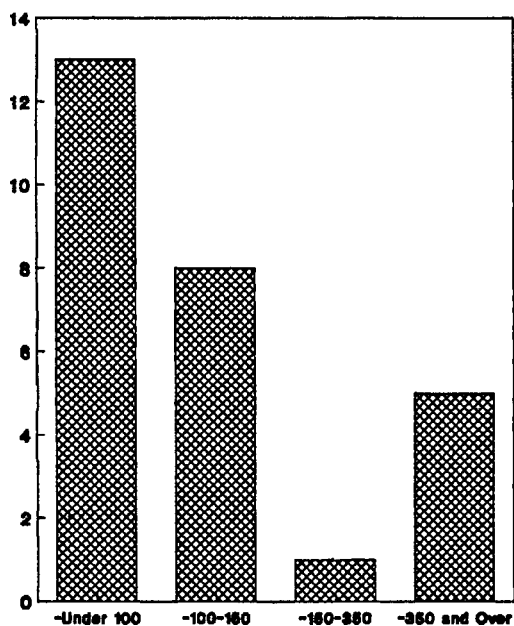
**Note: The figures above do not include the large number of small out-board boats of less than 6 metric tonnes.**

Figure - 4.1

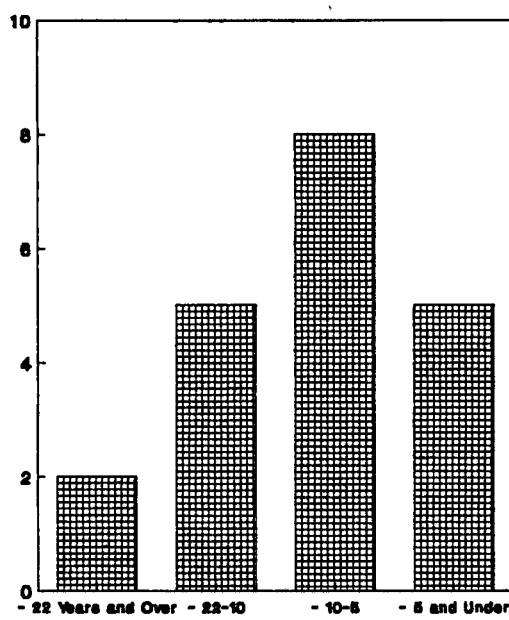
### Number of Ships by Type



### Size of Vessels



### Age of Vessels



Source: See Table 4.2

## **4.2 EMPLOYMENT OF MARSHALL ISLANDS FLEET**

### **4.2.1 Manning of Officers, 1992. (Domestic trade)**

To date, no manning rules have been formulated by the Ministry of Transportation and Communication in the Marshall Islands. Consequently, it is extremely difficult to distinguish the types of vessels which require more officers (both deck and engineers). Nevertheless, most of the figures shown in Table 4.3 were developed as a result of interviewing several Marshallese and foreign shipowners, and Government agencies. This accounts for the variations shown in manning levels among the vessels that are active in the Marshall Islands waters.

Based on the present low manning levels required by shipowners as regards deck officers and marine engineers, the actual employment of foreign and local officers onboard the domestic fleets (29 vessels) is about 36 marine engineers and 46 deck officers (82 officers all in all). If all vessels active in the domestic trade were manned in accordance to their minimum safe manning requirement, employment of Marshallese officers would have increased in 1992.

The reason for the low manning levels required by commercial trade and fishing vessels for deck officers and marine engineers is the shortage of qualified officers in the country, as has shown in Table 4.3.

The required number of deck officers is dependent upon the route and size of the vessel. The required number of marine engineers depends on the power of the vessels main engine rating in HP. Further details regarding minimum manning levels for deck officers and engine officers are shown in Appendix A..

**TABLE 4.3 PRESENT MANNING OF MARSHALL ISLANDS VESSELS:  
NO. OF OFFICERS (DOMESTIC TRADE)**

<b>SIZE OF VESSELS</b>	<b>DECK OFFICERS</b>	<b>MARINE ENGINEERS</b>
<b>1. * Micro Class Vessels:</b>	12 (10)	12 (10)
1.1 Less than 1600 GRT Engine power less than 600 HP		
<b>2. General Cargo Vessels:</b>		
2.1 *** Less than 161 GRT Engine power less than 85 HP	1 (1)	** (1)
2.2 Less than 50 GRT Engine power less than 50 HP	1 (1)	1 (1)
2.3 Less than 40 GRT Engine power less than 15 HP	1 (1)	2 (2)
2.4 Less than 80 GRT Engine power less than 290 HP	2 (2)	1 (1)
<b>3. * YFU 76 &amp; 77 GCV:</b>		
3.1 Less than 800 GRT Engine power less than 450	4 (3)	4 (4)
<b>4. LCU (General Cargo Vessels):</b>		
4.1 *** Less than 232 GRT Engine power less than 235 HP	2 (2)	** (1)
<b>5. * Patrol Boat:</b>		
5.1 Less than 140 GRT Engine power less than 2000 HP	4 (1)	3 (2)
5.2 Less than 97 GRT Engine power less than 450 HP	1 (1)	1
<b>6.0 MMAGG Fishing Vessels:</b>		
6.1 *** Less than 84 GRT Engine power less than 260 HP	1	1
6.2 *** Less than 84 GRT **Engine power less than 235 HP	1	1
6.3 *** Less than 98 GRT Engine power less than 250 HP	1	1
6.4 *** Less than 76 GRT Engine power less than 200 HP	1	1

6.5 *** Less than 84 GRT **Engine power less than 235 HP	1	**
<b>7. Local Fishing Vessels:</b>		
7.1 *** Less than 151 GRT **Engine power less than 250 HP	1	1 (1)
7.2 *** Less than 131 GRT Engine power less than 230 HP	1	1
7.3 *** Less than 144 GRT Engine power less than 250 HP	1	1
7.4 *** Less than 145 GRT **Engine power less than 500 HP	1	1 (1)
7.5 *** Less than 114 GRT Engine power less than 250 HP	1	1 (1)
7.6 *** Less than 137 GRT **Engine power less than 290 HP	2 (1)	1 (1)
<b>8. Other Fishing Company:</b>		
8.1 *** Less than 150 GRT **Engine power less than 750 HP	2	1
8.2 *** Less than 150 GRT Engine power less than 550 HP	2	1
8.3 *** Less than 144 GRT Engine power less than 390 HP	1	1
8.4 *** Less than 201 GRT **Engine power less than 550 HP	1	**

**\*Source: Ministry of Transportation and Communications, Ministry of Resources and Development, Sea Patrol Base of the Ministry of Justice, local shipowners, and other fishing companies.**

**Notes: 1) Numbers in brackets show the number of deck officers and engine officers who require Licences.**

**2) \* Government Vessels.**

**3) \*\* Captain and also Chief Engineer . Low manning for deck officer and engine officer due to lack of qualified Marshallese.**



**4) \*\*\* Not Registered in the Marshall Islands, but licensed to operate in Marshall Islands waters.**

These figures are based on the writer's experience from interviewing the shipowners.

**4.2.2 Marshallese and Foreign Crews Employed in Domestic Trade**

The local crew onboard the **general cargo** fleet is a mix of many other nationalities, such as Federated States of Micronesians, Kiribatian, and Tuvaluan. About 82% of all officers working aboard the general cargo ships and patrol boats are Marshallese; 18% are foreigners. Of the employees below officer rank, 96% are Marshallese and 4% are other nationalities.

It is seen in Table 4.4 that the **fishing vessels** are only manned by foreign officers. The number of local ratings on board is generally lower than the number of ratings onboard general cargo ships due to the lack of qualified Marshallese fishing crews. Most of the fishing companies have stated that they would be agreeable to offering these jobs to any qualified Marshallese in the future.

According to the interviews, the foreigners employed on most of the fishing vessels are mainly Americans; there are also a few Costa Ricans, Koreans and other nationalities.

The present fisheries training programme will provide knowledge and skills for locals who wish to become qualified fisheries skippers. Therefore, in the future the number of local fishermen ratings and officers will be increased, apart from the needs of the commercial trade.

**TABLE 4.4 EMPLOYMENT OF OFFICERS AND RATINGS ABOARD LOCAL GENERAL CARGO AND FISHING VESSELS, AND OTHER VESSELS ACTIVE IN THE MARSHALL ISLANDS.**

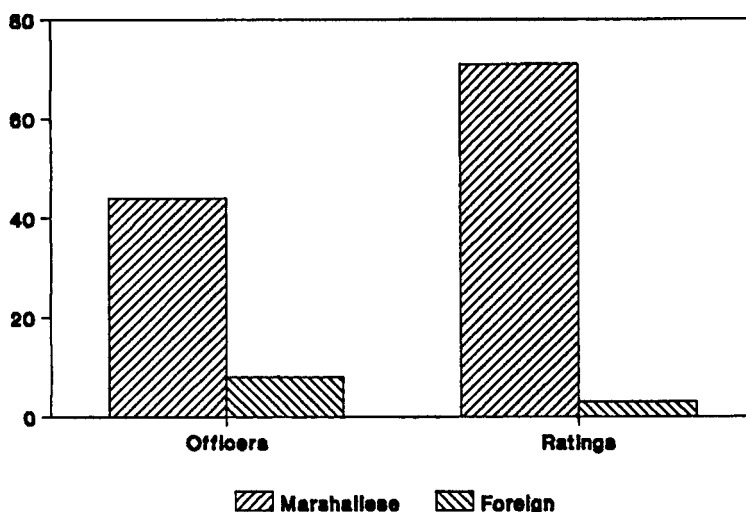
Type of Vessel	No. of ships	<u>Officers</u>			<u>Ratings</u>		
		Local	Foreign	Total	Local	Foreign	Total
General Cargo	12	35	8	43	53	3	56
Patrol Boat	2	9		9	18		18
Local Fishing- -Vessels	6	1	12	13	22	20	42
Other Fishing Companies	9		18	18	32	43	75
<b>Total</b>	<b>29</b>	<b>45</b>	<b>38</b>	<b>83</b>	<b>125</b>	<b>66</b>	<b>191</b>

**\* Source: Ministry of Transportation and Communications, Ministry of Resources and Development, Sea Patrol Base of the Ministry of Justice, local shipowners, and other fishing companies.**

**Note: The figures do not include international fleets (44 vessels) due to no data being available to classify the number of crew onboard foreign ships.**

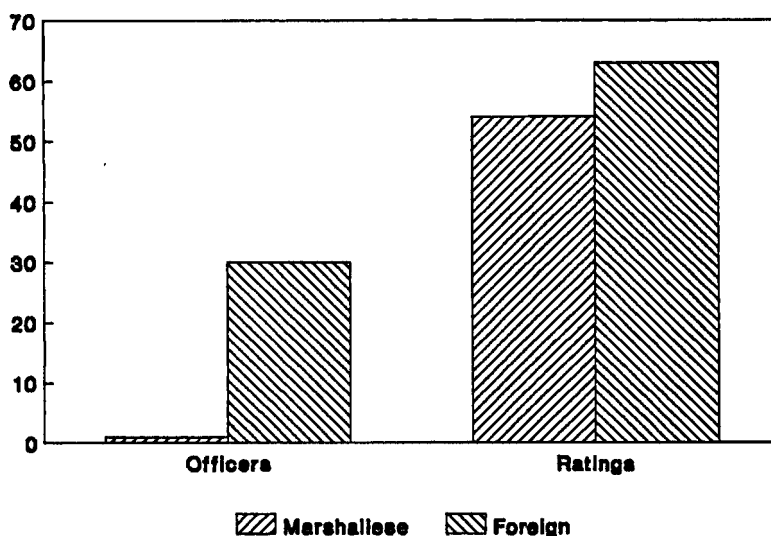
Figure - 4.2

### Employment of Officers and Ratings in Domestic Trade (1993)\*



\* General Cargo Vessels/Patrol Boats

### Employment of Officers and Ratings in Domestic Trade (1993)\*



\*Fishing Vessels

Source: See Table 4.4

### **4.3 PROJECTION OF THE DEMAND FOR MARSHALLESE SEAFARERS (1993-1998)**

#### **4.3.1 Future fleet requirements**

##### **4.3.1.1 Domestic Trade**

There are no dependable statistics of ships operating in the Marshall Islands in 1992. However, in order to make a projection of the demand for Marshall Islands seafarers (five years development plan), the writer interviewed shipowners such as MMAGG and other fishing companies concerning their expansion plans. Such plans included the government development project to establish a fleet of 100 or more vessels over the ten year period 1993-2003.

The current (1992) number of ships (29) operating in the Marshall Islands will increase over the next few years. This number is expected to increase by around 39 vessels over the next 4 years (mainly used and new ships ), this estimate being based on 10 per annum.

The fishing company and Government projections for the few years ahead may not lead to a rapid enough increase in the domestic trade. Nevertheless, it seems reasonable to assume that the average annual growth rate will at least be increased.

In the interviews, the shipowners indicated that the supply of present fishermen ratings is insufficient to meet the current demand. The shortage is particularly acute on the engine side, where there is a lack of marine engineers entering the Marshall Islands Fisheries Training Centre. According to the shipowners, there is an urgent need to expand the maritime training school to educate more ratings to meet the future demands for fishing vessel, and commercial vessel crews. Consideration

should be given to increasing the number of deck and engine ratings beyond the Fisheries Training Centre's present intake of 20 per annum.

#### 4.3.1.2 International trade

The total number of ships registered in the country has increased over the past 4 years, since the open registry was established in 1988. However, there are no reliable statistics on the ships registered in the past 3 years. The annual growth rate provided, 11% per annum is the one calculated for 1988-1992. The projection of registered foreign owned vessels for 1993-1998 is 66, assuming that the annual growth remains as in the previous years.

#### 4.3.2 Projected Size of the Marshall Islands Fleet (Domestic and international trade)

In predicting the future size of the Marshall Islands domestic and international fleets, a differentiation is made between the exceptional annual growth rate for individual type vessels. Moreover, as international trade grows, tankers and other types of vessels are assumed to grow at a faster rate than the domestic trade. The assumption of annual growth rates is summarized below.

**TABLE 4.5 DOMESTIC AND INTERNATIONAL NET ANNUAL GROWTH RATE**

<b>DOMESTIC TRADE</b>	<b>NUMBER OF VESSELS</b>
1. General cargo	18 percent
2. Fishing vessels	50 percent
<b>INTERNATIONAL TRADE</b>	
1. Other type of vessels	25 percent
2. Tankers	25 percent

The annual percentage growth rate is based on projections mentioned earlier.

**TABLE 4.6 NUMBER OF SHIPS IN THE MARSHALL ISLANDS:  
FORECAST FOR 1994-1998**

SHIP TYPE	1993	1994	1995	1996	1997	1998
Merchant vessels	14	16	18	20	22	24
Fishing vessels	15	23	31	39	47	55
<b>Total</b>	<b>29</b>	<b>39</b>	<b>49</b>	<b>59</b>	<b>69</b>	<b>79</b>

**TABLE 4.7 NUMBER OF SHIPS IN INTERNATIONAL TRADE FLAGGED  
UNDER MARSHALL ISLANDS: FORECAST FOR 1994-1998**

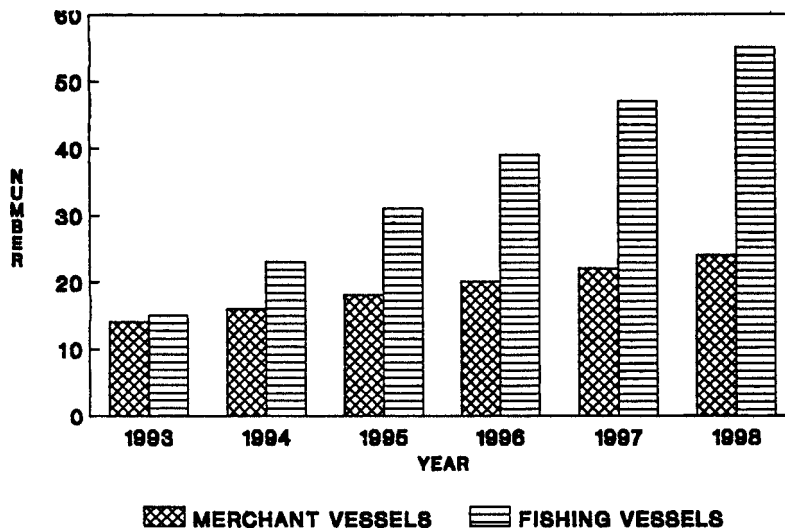
SHIP TYPE	1993	1994	1995	1996	1997	1998
Other type of vessels	34	42	50	58	66	74
Tankers	10	13	16	19	22	25
<b>Total</b>	<b>44</b>	<b>55</b>	<b>66</b>	<b>77</b>	<b>88</b>	<b>99</b>

#### 4.3.3 Projected Manpower Requirements

In Table 4.6 and Table 4.7, the projection of the future demand for officers and ratings is based on projected for international and domestic trade. However, no manning rules have yet been applied to the vessels that are active in domestic waters. Accordingly, the projection of future demand is based on the ITF's ( International Transport Works' Federation) Minimum Safe Manning Scales.

**Figure - 4.3 No. of Ships in the Marshall Islands:**

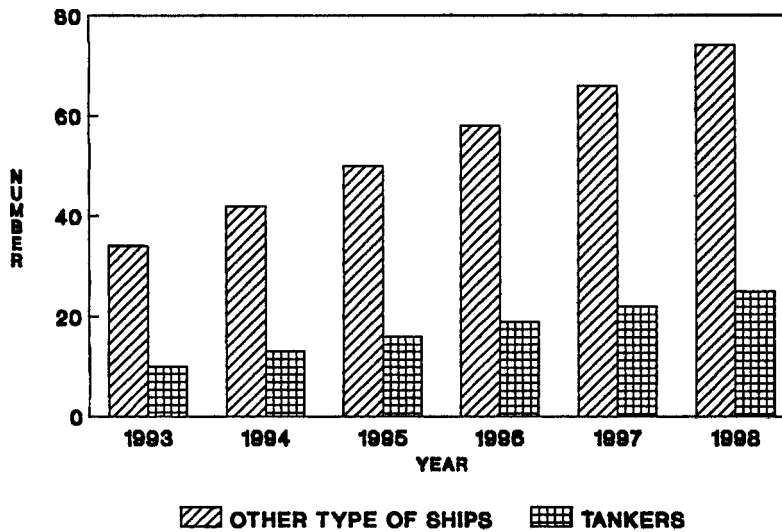
**Forecast for 1994-1998**



Source: See Table 4.6

**Figure - 4.4 No. of Ships in International Trade Flagged**

**Under Marshall Islands: Forecast for 1994-1998**



Source: See Table-4.7

The difference in the figures shown below in Table 4.8 is calculated by using ITF's minimum manning levels (details are shown in Appendix A).

**TABLE 4.8 DEMAND FOR MARSHALLESE SEAFARERS ON NATIONAL FLAG VESSELS 1993 - 1998**

<b>VESSELS IN INTERNATIONAL TRADE (NO)</b>	<b>1993</b>	<b>1998</b>
1) Deck officers	220	395
2) Marine Engineers	176	316
3) Ratings	616	1,106
<b>Total</b>	<b>1,012</b>	<b>1,817</b>

<b>VESSELS IN DOMESTIC TRADE (NO.)</b>	<b>1993</b>	<b>1998</b>
1) Deck Officers	46	130
2) Marine Engineers	44	100
3) Ratings	191	320
<b>Total</b>	<b>242</b>	<b>550</b>

The total number projected above for Marshallese seafarers in the year 1998, corresponds to the number of ships expected to increase within five years. However, if the fleets increase within the next 2-3 years, the assumption about the annual growth rate for Marshallese seafarers in 1998 may alternate by decreasing in number.

#### **4.4 MARSHALL ISLANDS EXAMINATION AND CERTIFICATE RESULTS 1990-92**

The Marine Board of Inspection of the Ministry of Transportation and Communications , reported that 27 candidates, (deck and engineer) appeared for the



licensing examinations during the years 1990-92. The data provided below provides evidence that the failure rate for deck officer candidates is low compared to that of engine department candidates.

**EXAMINATION RESULTS:**

**Deck Section:**

YEAR	ATTEMPT	PASSED	FAILED PERCENT
1990-1992	20	7	65 %

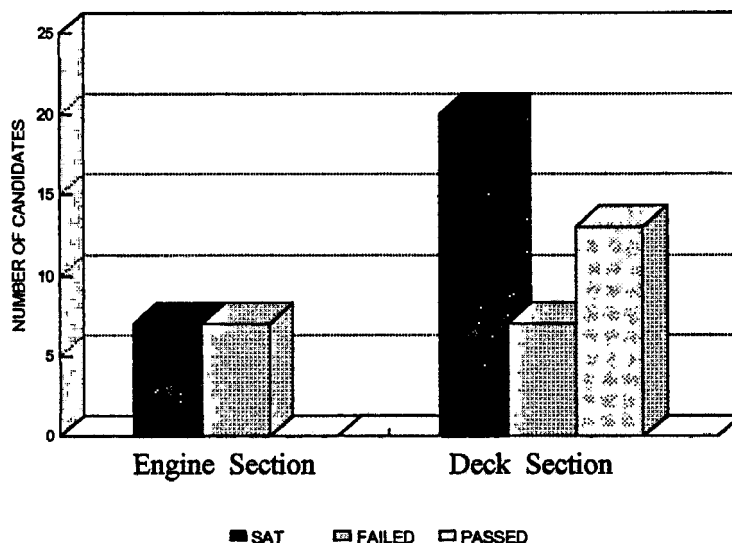
**Engine Section:**

YEAR	ATTEMPT	PASSED	FAILED PERCENT
1990-1992	7	none	100 %

Source: Ministry of Transportation and Communications

Figure - 4.5

**Ministry of Transportation & Communications  
Examination Results ( 1991-92)**



The certificates issued by the Board of Inspection on behalf of the Minister of Transportation and Communications to the 7 deck officers who attempted and passed the licensing examination are shown below.

<b>DECK SECTION</b>	<b>NO.</b>	<b>TONNAGE</b>	<b>LICENCE LIMITATION</b>
Master	2	1000 GRT	Pacific Ocean
Chief Mate	3	1000 GRT	Pacific Ocean
Chief Mate	2	1000 GRT	Marshall Islands Water

Further details of the overall number of current licensed officers in the Marshall Islands are provided in Table 4.9.

**TABLE 4.9 CURRENT NUMBER OF LICENSED OFFICERS**

<b>ENGINE SECTION</b>	<b>NO</b>	<b>LICENCE LIMITATION</b>	<b>TRADE</b>
Chief Engineer	2	Not over 2,000 HP	Any Ocean
Chief Engineer	5	Not over 1,000 HP	Pacific Ocean
Third Engineer	1	Not over 2,000 HP	Any Ocean
<b>DECK SECTION</b>			
Master	1	Unlimited	All trades
Master	6	Not over 1,000 GRT	Pacific Ocean
Chief Officer	3	Not over 1,000 GRT	Pacific Ocean
Chief Officer	2	Not over 1,000 GRT	Inter-Island
Third Officer	1	Not over 1,000 GRT	Pacific Ocean
<b>Total</b>	<b>21</b>		

The above number of current certificated officers is generally less than non-certificated local officers working onboard domestic trade.

As can be seen in Table 4.3, there are 59 local officers working onboard domestic trade vessels; of this number 49 are non-licensed officers (83%) including captains, chief engineers; and other ranks. The remaining 10 officers (17%) have the national licence, excluding the number working on land.

Nevertheless, the overall number of local certificated officers, covers only around 12% of domestic trade demand for officers: 31% of the demand is covered by foreign certificated officers, and 57% by non-certificated local & foreign officers.

Based on the demand for certificated local officers, it is verified that the domestic trade fleets will be suffering from insufficient local certificated officers to comply with **Bill No. 29 ND-1 P.L. 1992-26, the Domestic Water Craft Act**, passed by the **Nitijela of the Marshall Islands in the 13th Constitutional Regular Session, 1992** which relates to the certification and training of crew.

As soon as the Domestic Water Craft Act is implemented, shipowners may employ more foreign certificated officers to replace non-certificated local officers on board domestic trade vessels, to satisfy the legislative regulations.

To allow the number of non certificated personnel among deck officers and marine engineers to meet the immediate demand for certificated local officers, the following steps should be taken.

- 1) The Minister of Transportation and Communications and the Director of M.I.M.R.A. should allow the fisheries training centre to provide a preparatory course for non-certificated local officers who have served onboard domestic vessels as officers, before applying for the national licensing examination.
- 2) Those who successfully complete the preparation course will be eligible to sit

for the licensing examination.

In addition, the preparation course will reduce the failure rate for deck officers and engine department candidates mentioned earlier.

Further details of the number of non-licensed and licensed officers working at sea and on land are shown in Figure - 4.6.

#### **4.4.1 The Standard of Examinations and Certification in the Marshall Islands.**

The Examination and Certificate standards in the Marshall Islands do not meet the requirements of international conventions particularly the STCW Convention of 1978. The current problems are listed below.

- 1) No appropriate standard of examination is given for various grades of seafarers.
- 2) In the provisions of the current maritime legislation, examination and certification of officers are not included.
- 3) Most holders of chief officer certificates and grades below are serving as masters onboard domestic trade vessels.
- 4) Presently, no preparation course is given to candidates before examination.

#### **4.4.2 To Improve the Standard of Examination and Certification.**

To upgrade the standards of examination and certificate in the Marshall Islands, it is

necessary to adopt the South Pacific Maritime Code, which covers the requirements of the STCW Convention 1978.

The code is not a legal document itself, but provides a set of minimum technical standards which can be used by Pacific Island countries as a basis for their national maritime legislation. National administrations are perfectly free to adopt higher standards and more stringent requirements in their national legislation if they so desire.

The International Maritime Conventions included in the Code are:

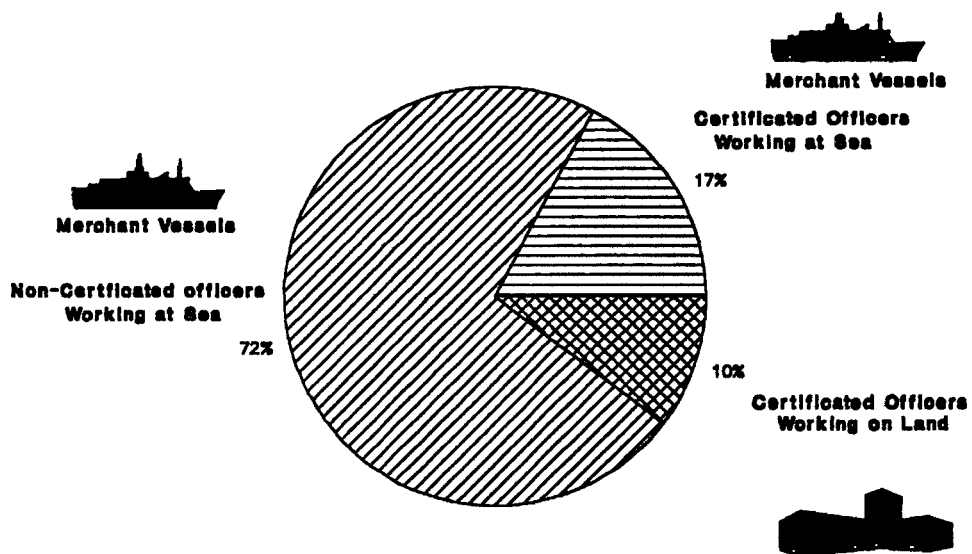
- International Convention for the Safety of life at Sea. 1974 (SOLAS 1974).
- International Convention on Load Lines, 1966 (LL 1966);
- Regulation for Preventing Collisions at Sea, (COLREG 1972)
- International Convention on Standards of Training, Certification and Watchkeeping, 1978 (STCW 1978)
- International Convention on Tonnage Measurement of Ships, 1969. (TONNAGE 1969).

Chapter 2 of the South Pacific Maritime Code provides for:

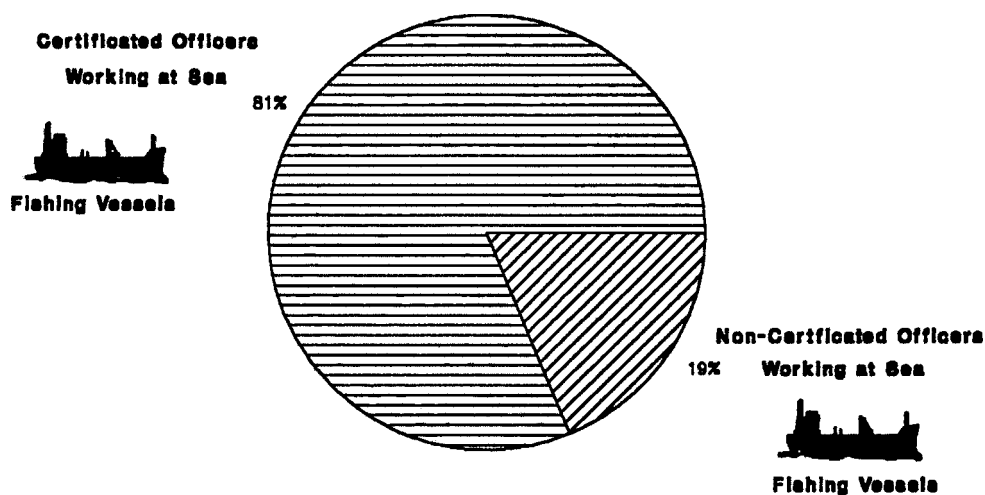
- General requirements of the STCW Convention
- Masters and Deck Officers- Manning and Qualifications
- Marine Engineers - Manning and Qualifications
- Radio Officers-Manning and Qualifications

Figure - 4.6

### Non- Certificated and Certificated Officers Employed in Domestic Trade, 1993



### Non- Certificated and Certificated Officers Employed in Domestic Trade, 1993



Source: See Table 4.3

- Ratings-Manning and Qualifications.

The reader should refer to this document for further information.

#### **4.4.2.1 Examination Procedure**

The present examination procedure is insufficient and not up to STCW standards. To improve the system of conducting examinations for issuing certificates of competency, a Board of Examiners must be established, and it should comprise (2) representatives from the Ministry of Transportation and Communications and (2) from the M.I.M.R.A. Fisheries Training Centre. The Board should prepare the written examinations papers for all grades of licences for fishermen and commercial trade ratings in accordance with the Convention on International Standards of Certification and Watchkeepings 1978. Furthermore, there should be an oral examination in these subjects suited for such examinations.

The licensing examination for fisheries and commercial trade ratings for individual grades must be performed by a Board of Examiners and it should take place in the fisheries training centre..

### **4.5 MARINE CASUALTIES DUE TO HUMAN FACTORS IN THE MARSHALL ISLANDS**

#### **4.5.1 Study Reports**

The analysis of Marshall Islands marine casualty statistics shows that in the past eight years (1985-1991) there have been 41 marine casualties, with an average 7 casualties per year. The statistics all summarised in Table 4.10.

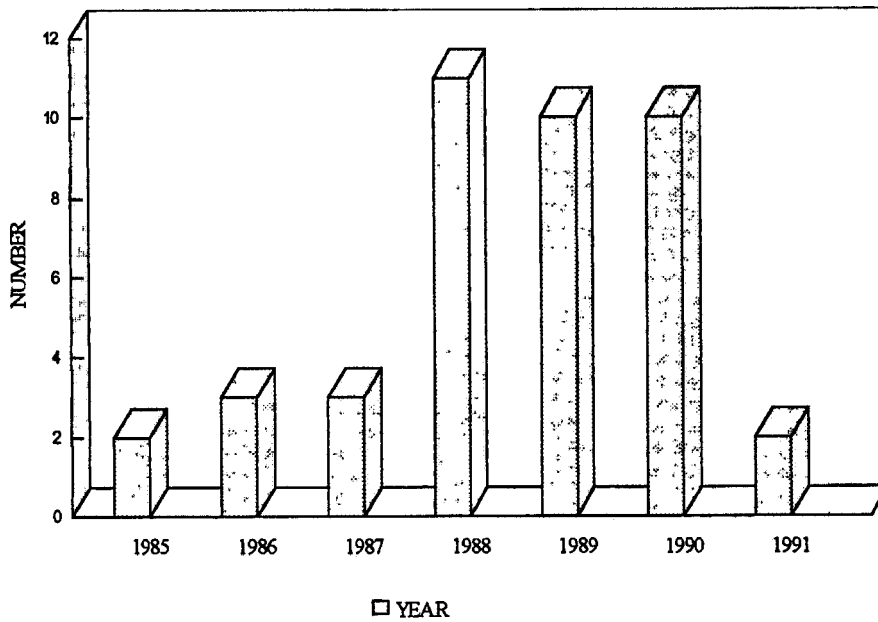
**TABLE 4.10 NUMBER OF REPORTED MARINE CASUALTIES IN THE MARSHALL ISLANDS: 1985 to 1991**

1985	1986	1987	1988	1989	1990	1991
2	3	3	11	10	10	2

\* Source: Office of the Chief Secretary

Figure - 4.7

**Marine Casualties in the Marshall Islands**



These accidents involved fishing vessels of less than 24 metres, as well as wooden and fibreglass vessels that play a vital role in carrying local cargo and passengers in the inter-island transport services, and also included some small outboard motor boats mainly used by local fishermen.



According to the reports made by the Search and Rescue Department under the supervision of the Chief Secretary's Office, the predominant causes of the accidents were (a) heavy weather, (b) unqualified skippers, (c) human error and unseaworthiness of vessels.

In the previous year, the large number of vessels grounded, lost, capsized and sunk were mainly small out-board boats, cargo ships and fishing vessels. These accidents caused the loss of human life as well as the loss of property damage.

The figures shown in Table 4.8 are based on the number of vessels reported. Nevertheless, it is difficult to provide accurate statistics for the number of vessels totally lost with the deaths of the crew on board. Also, the number of vessels salvaged or grounded is uncertain due to the fact that no formal reports were lodged regarding marine casualties for the past eight years in the Marshall Islands waters.

#### **4.5.2 Water Areas of Marine Accidents**

According to reported in the past seven years, the geographical areas which are prone marine accidents are:

- the areas around Kwajalein and its environs;
- Majuro Harbour, the strait of Majuro and Arno; and
- some areas in the Northern Islands and the Southern Islands.

Based on the report, the strait of Majuro and Arno are the worst areas where casualties were reported every year. Therefore, it is necessary to prevent, or at least minimize, maritime casualties in the Marshall Islands waters. The author's suggestions for countermeasures are as follows:

- 1) To expand the education facilities for Marshallese seafarers by strengthening training facilities and equipment; and
- 2) To review the upgrading of the safety equipment standards which will reduce the risk in all surrounding waters.

#### **4.6 TO IMPROVE MARITIME SAFETY STANDARDS IN THE MARSHALL ISLANDS**

Hopefully, from the results of the analysis of marine casualties in the past eight years, the survey will provide feed back to the government agencies responsible for maritime safety and thereby help them to introduce more stringent measures in future.

Maritime safety can be guaranteed only through the enforcement of the **Domestic Watercraft Act 1992**. However, other safety measures should be considered to protect the coasts and ocean of the Republic against oil pollution from the increasing number of interislands cargo ships. The following appropriate measures should be taken into due consideration:

- 1) The maritime sectors responsible for transportation safety, should engage consultants to carry out hydrographic surveys in the Marshall Islands to update the nautical charts.
- 2) Aids to navigation are essential to ensure safety. Navigation aids such as buoys and beacons should be installed in the complicated channels conditions in the nation. This would provide safety to vessels, especially in view of the steady increase in interisland services.

- 3) To improve safety standards of small vessels at sea , it is absolutely necessary for maritime safety awareness to be promoted by the training centre for Marshallese seafarers.
- 4) The introduction of minimum safety equipment standards to all craft in all vessel operation areas. The introduction of certificates of seaworthiness and regular survey and inspection services to ensure standards are maintained aboard must be a high priority.

The above recommendations are based on the author's experiences as a seafarer in the past 10 years, and in the standards of safety being practised elsewhere in the region. Nevertheless, the only way to promote maritime safety in the country is for the government of the Republic of the Marshall Islands to revise the current maritime legislation.

#### **4.7 GLOBAL DEMAND FOR SEAFARERS**

According to a joint Baltic International Maritime Council (BIMCO) and International Shipping Federation (ISF) report, world trade will grow at around 3-4 per cent per annum up to the year 2000 and the highest growth area is considered to be in the Pacific Basin, especially Japan and other Asian countries.

In 1990, the results of the study produced evidence that the total supply of seafarers in around the world was about 1.4 million, of which 400,000 are officers and 840,000 are ratings. On the demand side, it was estimated that the commercial trading fleet requires around 450,000 officers, but that a surplus of 200,000 ratings exists.

In 1990, the 41,000 vessels trading round the world reportedly had a deficiency of officers of about 50,000. Consequently, some of these vessels could not sail due to a shortage of crew.

According to the projected growth in the demand, report estimates that in the year 2000 there will be an excess demand of 400,000 for both officers and ratings, meaning that the lack of officers will increase and the apparent surplus of ratings, will turn into a substantial shortage unless the number of seamen is increased.

From these facts it can be concluded that the current Marshallese Training Centre will need to upgrade its standard of training in accordance with STCW requirements, so that Marshallese seafarers can benefit from employment onboard foreign flag ships in the future in the same way as the seafarers of Kiribati, Fiji and other neighbouring countries in the Pacific region.

## **CHAPTER 5**

### **PROPOSED PROGRAMS FOR THE FISHERIES AND NAUTICAL TRAINING CENTRE (TRADING VESSELS)**

This Chapter initially provides details of the proposed five-year enrolment plan for merchant and fishing vessels, which specifies the number of intake and graduate seafarers in the future. It includes a curriculum designed for merchant ship cadets and ratings which complies with the STCW convention. Subsequently, the Chapter introduces the role of the Ministry of Education, and addresses some of the general education programmes which the Ministry of Education should offer in the FNTC in the future.

The proposed changes are justified on the basis of the need of the training centre to satisfy the future requirement of the Ministry of Education to grant certificates of attendance for Marshallese seafarers after successful completion of the training programme.

The proposed formal structure of education and curriculum development for fishing vessels (both deck and marine engineer) is shown in Chapter 6.

The introduction of the formal structure of education for fisheries and nautical trainees in 1994 will raise the quality of training in the country up to the international standard, which will allow overseas institutes and foreign shipowners to recognize the standard of training in the country.

## **5.1 FIVE YEAR DRAFT ANNUAL ENROLMENT PLAN FOR THE FNTC (1995-1999)**

According to the analysis in Chapter 4, it is evident that the demand (by foreign and local shipowners) for deck and engine room personnel, both officers and ratings, will increase. Accordingly, the current Fisheries Training Centre alone will not be able to cover the new demand in both sectors (domestic trade, and international trade) unless the annual intake of cadets and ratings for merchant ships is raised, and the increase in the annual intake of fishing vessel ratings continues.

With the extremely rapid growth of the Marshall Islands fleet, it is a challenge for the maritime training centre in the country to ensure that the intake numbers are in line with the increased demand for Marshallese seafarers and to be sure that it does not flood the market. Importantly, the FNTC must ensure that the students will gain employment after graduation.

To increase the intake in the future, the author has prepared a proposed 5 year draft annual enrolment plan, which will cover the demand for Marshallese seafarers ( as seen in Table 5.1, 5.2, and 5.3) up to the year 2000. The proposed enrolment plan for the future is based on the assumption that the fleet will be increased in the future (both domestic and international trade). Gradually, starting in 1995 and onward, if the proposed expansion plan for FNTC is fully implemented, the annual intake will be increased from 20 to 60 fishing boat crew, 20 cadets, and 20 ratings for merchant ships.

The proposed expansion plan for FNTC is discussed in chapter 7. It provides details of the necessary equipment, classrooms and accommodation for outer-island students, and advises on the necessary number of lecturers required to be employed in the future ( see staff development plan in Chapter 7).

**TABLE 5.1 FIVE YEAR DRAFT ANNUAL ENROLMENT PLAN FOR  
THE FNTC (MERCHANT SHIP OFFICERS ONLY)**

	1995	1996	1997	1998	1999	2000
Jan	95A-1	96A-1	97A-1	98A-1	99A-1	20A-1
Feb				95A**	96A**	97A**
March		95A-3	96A-3	97A-3	98A-3	99A-3
April	95A-2	96A-2	97A-2	98A-2	99A-2	20A-2
June		95A-4	96A-4	97A-4	98A-4	99A-4
July			95A-5	96A-5	97A-5	98A-5

<b>No. of Graduates Deck:</b>	9	9	9 = 27
<b>Engine:</b>	9	9	9 = 27

---

**Total..... 54**

**Notes: 95 = calendar year of commencement**

**A = 1st intake**

**1 to 5 = represent stage**

**Stage 1 = 13 weeks at the FNTC**

**Stage 2 = Sea time, 1 year (deck)**

**Sea time, 9 months ( engine)**

**Stage 3 = 13 weeks (deck )**

**26 weeks (engine) at the FNTC**

**Stage 4 = Sea time, 1 year**

**Stage 5 = 26 weeks (deck and engine) at the FNTC**

**\*\* = Graduation day**





**TABLE 5.3 FIVE YEAR DRAFT ANNUAL ENROLMENT PLAN FOR THE  
FNTC (FISHING VESSEL OFFICERS ONLY)**

	1995	1996	1997	1998	1999	2000
Jan	95A-1	96A-1	95B-5 97A-1	96B-5 98A-1	97B-5 99A-1	98B-5 20A-1
March	95A-2	96A-2	97A-2	98A-2	99A-2	20A-2
April		95B-3	96B-3	97B-3	98B-3	99B-3
June		95A-5	95B** 95A-5	96B** 96A-5	97B** 97A-5	98B** 99A-5
July		95B-4	96B-4	97B-4	98B-4	99B-4
Aug	95B-1	96B-1	97B-1	98B-1	99B-1	20B-1
Sept	95A-3	96A-3	97A-3	98A-3	99A-3	20A-3
Oct	95B-2		97B-2	98B-2	99B-2	20B-2
Nov		95A**	96A**	97A**	98A**	99A**
Dec	95A-4	96A-4	97A-4	98A-4	99A-4	20A-4

No. of

<b>Graduates Deck</b>	<b>14</b>	<b>28</b>	<b>28</b>	<b>28</b>	<b>28 = 126</b>
<b>Engine</b>	<b>13</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26 = 117</b>

---

**Total..... 243**

**Note: 95 = calendar year of commencement**

**A = 1st intake, B = 2nd intake**

**1 to 5 = represent stages**

**Stage 1 = 10 weeks at the FNTC**

**Stage 2 = Sea time, 6 months,**

**Stage 3 = 10 weeks at the FNTC**

**Stage 4 = Sea time, 6 months,**

**Stage 5 = 20 weeks at the FNTC**

**\*\* = Graduation day**

If the enrolment plan is followed, FNTC will be able to cover around 60.77 % of the local demand for deck officers in the year 1999. On the engine side, FNTC will be able to cover around 74 % of the demand for marine engineers. This assumes that 90 % of all the FNTC graduates will find employment on board Marshall fleets active in the Marshall Islands waters and that the average wastage rate will be 10 percent.

## **5.2 ADMISSION REQUIREMENTS**

Before candidates can enrol in the Fisheries and Nautical Training Centre course, they must satisfy the following conditions:

### Education Qualifications:

- Applicants must possess High School Diploma to be eligible for Deck and Marine Engineer Cadet Certificate course.
  
- Applicants must have completed 9th grade to be eligible for either Fishermen or Merchant Ship Rating Certificate course (either deck or marine engineer).

### Minimum age:

- 16 years old

### Physical requirements:

- Certificate of medical fitness from the Ministry of Health and Environment to satisfy STCW Convention requirements.

### Intake Requirements:

- 60 fishermen ratings per year.

- 20 merchant ship cadets (deck and engineer) per year
- 20 merchant ship ratings per year

**Commencement of the courses:**

- First week of January for fishing and merchant vessels.
- Mid August for fishing vessels only.

Sea time is not required of new entrants, but candidates will be subject to interviews before selection.

### **5.3 STCW CONVENTION REQUIREMENTS**

#### **5.3.1 Requirements for Deck and Engine Room Officer's Watch-Keeping Certificate**

The STCW Convention requirements for a deck watch-keeping Certificate (ships of 200 G.R.T. and over) are as follows (STCW II/4):

The candidate must:

- be not less than 18 years
- Have not less than a total of 3 years' training which includes a minimum of 12 months approved sea-going service.
- Have completed at least six months of bridge watchkeeping duties understudying the officer of the watch.

- Satisfy the administration by examination that he/she possess adequate theoretical and practical knowledge appropriate to his duties as a certified deck officer.
- Have completed appropriate safety training.

The STCW minimum requirements for a marine engineer candidate to obtain a Certificate as Engineer Officer in charge of a watch are as follows (STCW III/4).

The candidate must:

- Be not less than 18 years.
- Have not less than a total of 3 years' approved education or training relevant to the duties of marine engineer.
- Have completed an adequate period of sea-going service (which may have been included in the 3 years of training);
- Satisfy the administration that he/she has sufficient theoretical and practical knowledge of the operation and maintenance of marine machinery appropriate to the duties of an engineer officer.
- Have completed appropriate safety training.

### **5.3.2 Requirements for Ratings Forming Part of a Navigation or Engine Room Watch.**

The STCW Convention requirements for a rating forming part of a navigation watch

on sea-going vessels of 200 G.R.T and over are as follows (STCW II/6)

The candidate should:

- Be at least 16 years
- Have not less than six months' sea experience associated with navigation watchkeeping duties; or
- Have successfully undergone special training, either pre-sea or aboard ship, for an adequate period of sea-going service as required by administration, with a minimum of 2 months.
- Complete appropriate safety and basic training.

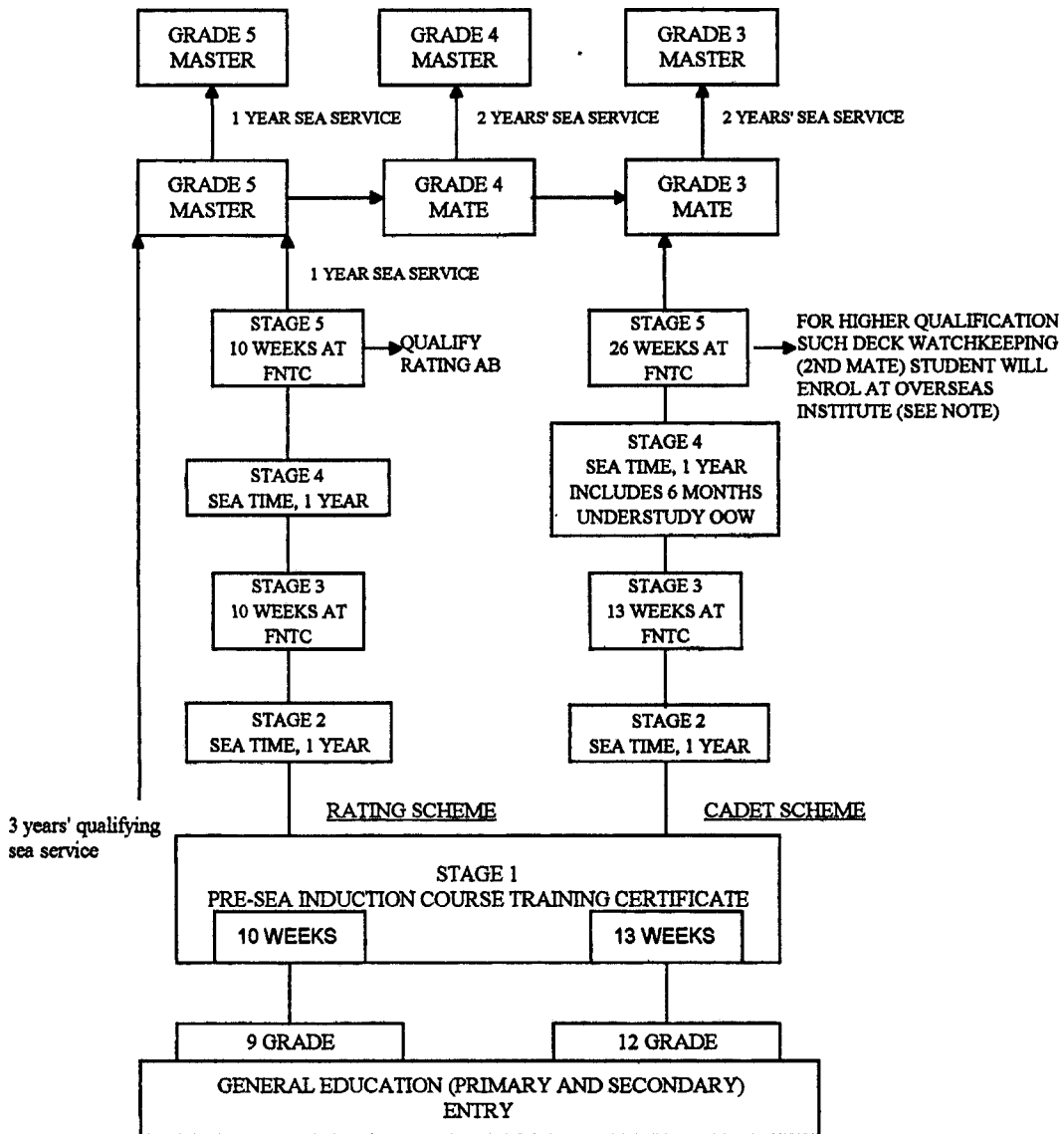
The STCW Convention requirements for a rating forming part of an engine room watch are as follows (STCW III/6)

The candidate should:

- Be at least 16 years.
- Have shore experience relevant to his sea-going duties, supplemented by adequate sea-going service; or
- Have at least six months approved sea-going service or
- Have undergone special training, either pre-sea or aboard ship, for an adequate period of sea-going service as required by the Administration.

Figure - 5.1

## Proposed Deck Course Structure for Merchant Marine Ships



Note: Eligibility to take the deck watchkeeping course in an overseas country will depend on the recognition of the student's qualifying sea service.

## **5.4 PROPOSED STRUCTURE OF EDUCATION**

### **5.4.1 Three-Year Training For Deck and Engineer Cadets**

To satisfy the STCW requirements for watch-keeping certificates for marine engineer and deck officers, the proposed curriculum for FNTC is divided into 1.0 years of theoretical studies and 2.0 years of sea-going experience on board Marshall Islands fleets. The aims of introducing this formal education system are as follows:

- To provide correct and satisfactory training for Marshallese cadets to fulfil STCW Convention requirements.
- To prepare deck and engineer cadets for the Grade 3 Pacific trade examinations.

The education programme for deck and marine engineering cadets consists of 5 stages. The stages are described below.

#### **5.4.1.1 Deck Cadets Certificate Course**

**Stage 1:** A 13-week deck cadets pre-induction course of full time study, incorporating the following subjects.

Total Course Hours: 390

#### **SYLLABUS OUTLINE**

- General ship knowledge
- Personal safety techniques
- Navigational watchkeeping duties as lookout helmsman

- Seamanship
- Cargo handling and safety
- Basic first aid
- Physics
- Applied mathematics
- English
- Physical training

\* Common subjects with engineer cadets stage 1.

**Note:** Cadets will attend basic courses in Sea Survival and Fire Fighting on Board Ships before proceeding to sea.

**Stage 2:** The cadets will have at least 1 year of practical training as deck cadets onboard sea- going merchant marine ships before entering stage 3. A short guided study program will be followed.

**Stage 3:** After completion of Stage 2, the cadets will enter stage 3 for 13 weeks of full time study at FNTC in the following subjects.

Course Hours: 390

### **SYLLABUS OUTLINE**

- General ship knowledge and stability
- Navigation
- Meteorology
- Cargo handling and stowage
- Communications
- Physics
- Applied mathematics



- Seamanship
- English
- Navigational safety
- First aid at sea

Note: Cadets will attend a first aid course before proceeding to sea.

**Stage 4:** After completion of stage 3, the deck cadets will have at least 1 year of sea-going practical training onboard merchant marine ships.

**Stage 5:** After completion of stage 4 the deck cadets will be allowed to enter this stage for the final 26 weeks of full time studies before graduation.

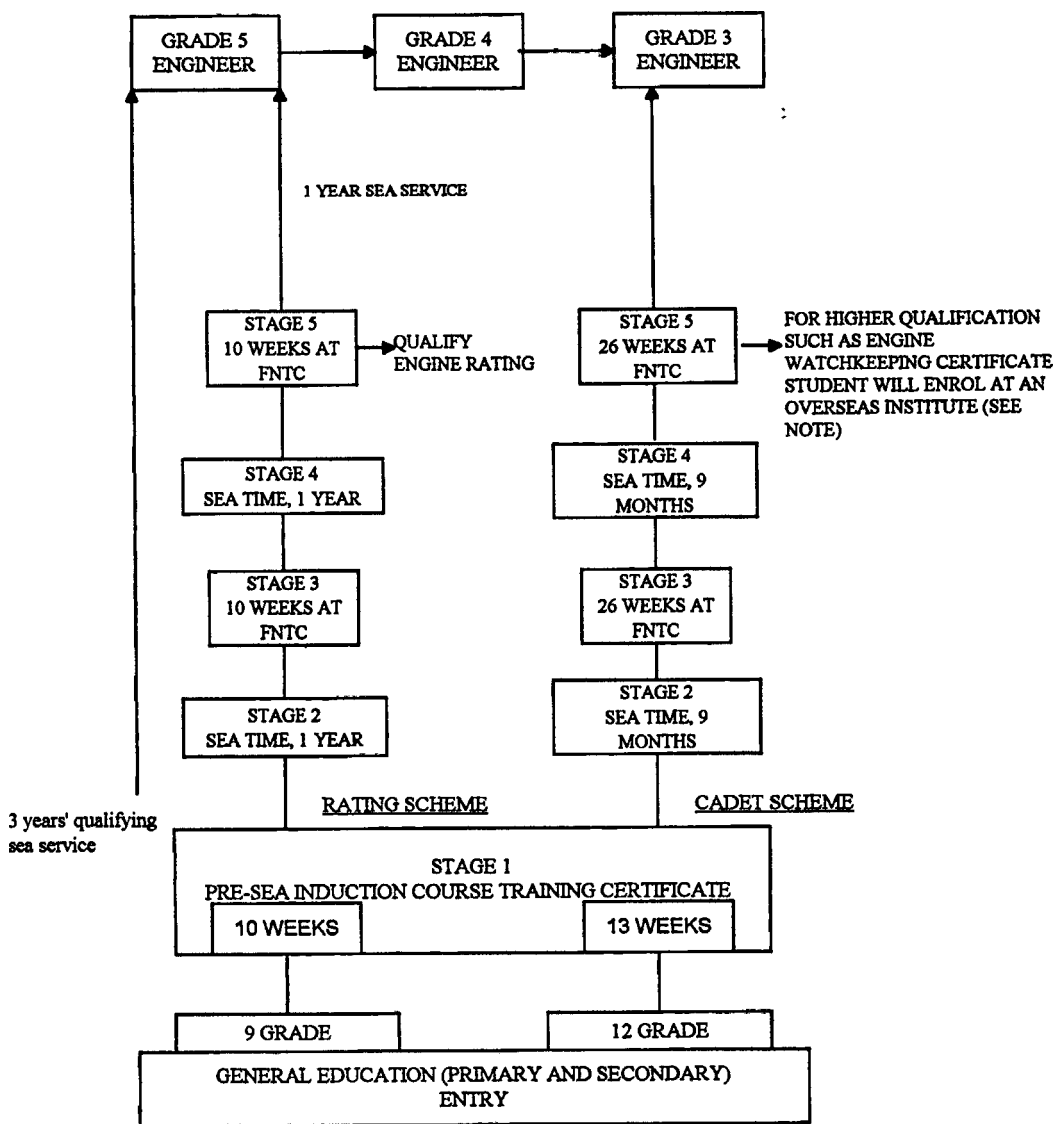
Course Hours: 780

### **SYLLABUS OUTLINE**

- Navigational bridge procedures
- Ship Construction & Stability
- Meteorology
- Cargo handling and stowage
- Radar
- Communications (GMDSS)
- Physics
- Electronic navigational aids
- Applied mathematics
- English
- Seamanship
- Introduction to computers and calculation
- Ship management

Figure - 5.2

## Proposed Marine Engineer Course Structure: Merchant Marine Ships



Note: Eligibility to take the engine watchkeeping course in an overseas country will depend on the recognition of the student's qualifying sea service.

### **5.4.1.2 Engineer Cadet Certificate Course:**

**Stage 1:** A 13-week Engineer Cadets Pre-induction Courses of full time studies at FNTC, incorporating the following subjects.

Course Hours: 390

#### **SYLLABUS OUTLINE**

- Personal safety techniques
- General ship knowledge
- Technical drawing
- Applied mathematics
- Basic marine engineering practice
- Engineering science
- Machining theory/practice
- Workshop theory/practice
- Welding technology
- Physical training
- English

\* Common subjects with deck cadet stage.

The cadets will attend basic courses in Sea Survival and Fire Fighting on Board Ship before proceeding to sea. Common subjects with deck cadet stage 1.

**Stage 2:** Duration of 9 months out of the school for practical training onboard merchant marine ships as engineer cadet. A short guided study program will be followed.

**Stage 3:** After completion of stage 2, the cadets will be allowed to enter stage 3 for 26 weeks of full time study at FNTC, stage 3 will consist of the following.

Course Hours: 780

### **SYLLABUS OUTLINE**

- Marine engineering drawing
- Applied mathematics
- Marine engineering practice
- Engineering science
- Machining theory/practice
- Workshop theory/practice
- Welding technology
- Electrical principles
- Principles of marine refrigeration
- English
- Physical training
- First Aid at Sea

**Stage 4:** Duration of 9 months out of the school for the continuation of sea-going practical training onboard merchant marine ships.

**Stage 5:** After completion of stage 4, the engineer cadets will be allowed to enter this stage for a 26 week period of full time study at the FNTC incorporating the subjects listed below.

Course Hours: 780

## **SYLLABUS OUTLINE**

- Marine engineering drawing
- Applied mathematics
- Applied mechanics
- Applied thermodynamics
- Introduction to computer and calculation
- Marine engineering knowledge (Steam/Motor)
- Marine engineering knowledge (General)
- Electrotechnology
- Naval architecture and ship construction
- Marine engineering practice II
- Ship management
- English

After satisfactory completion of the FNTC 3-years deck and marine engineer cadet courses, the cadets will be examined by the Marshall Islands Marine Board examiner in order to obtain their certificate of competency.

The FNTC will seek to obtain recognition of its courses of study by external institutions so that Marshallese mariners can obtain certificates of competency not offered at higher levels by FNTC.

### **5.5 FNTC EDUCATION STRUCTURE FOR DECK AND ENGINE RATINGS**

#### **5.5.1 Two and a Half - Year Training for Deck and Engine Ratings.**

This proposed formal educational structure of training for deck and engine ratings complies with STCW convention requirements. The curriculum is divided into 0.5

years of theoretical studies consisting mainly of traditional classroom training, followed by 2 years of practical training on-board Marshall Islands fleets.

#### **5.5.1.1 Deck Rating Training Programme**

The formal training syllabus/curriculum for deck ratings consists of 5 stages. The stages are provided below:

**Stage 1:** Duration of 10 weeks. Deck and engine ratings as well as fisheries and merchant marine students are required to attend this pre-induction course. After completion of this full time course at the FNTC, students will proceed to their vocational stream.

Course Hours: 300

#### **SYLLABUS OUTLINE**

- General ship knowledge
- Seamanship
- Safety at Sea
- Fishing methods
- Engine room familiarization
- Use of tools
- Physical training
- Steering and lookout duties

**Stage 2:** Duration of 1 year. Seetime on board general cargo vessels ( both domestic and international trade.) Task and guided study programme.

**Stage 3:** After completion of stage 2, the deck rating follows a 10 week period of

full time study consisting of the following subjects.

This course content for deck ratings forming part of navigational watch complies with IMO STCW Convention Regulation II/6.

Course Hours: 300

#### **SYLLABUS OUTLINE**

- Navigation Watchkeeping Duties as a Rating.
- Seamanship
- Cargo Handling Safety
- General Ship Knowledge
- Applied Mathematics
- Bouyage, Light and Shape recognition
- Physical Training
- English

**Stage 4:** One year out of the school for further sea-going training before entering stage 5. Task and guided study programme.

**Stage 5:** Duration of 10 weeks. This stage is to provide the student with the suitable level of training which will prepare him/her to sit for the Able Seaman examination by the Marshall Islands Marine Examination Board (MEB).

Course Hours: 300

#### **SYLLABUS OUTLINE**

- Ship Knowledge

- Safety
- Fire Fighting Theory and Practice
- Survival Theories and Practice
- Seamanship
- Cargo Work and Rigging
- Compass and Steering
- English
- Applied Mathematics
- Physical Training

#### **5.5.1.2 Engine Rating Training Programme**

**Stage 1:** A 10 week rating pre-induction course. This is a common course for all ratings (see section 5.3.2 stage 1).

**Stage 2:** One year out of the school for sea-going practice on board general cargo vessels (domestic or international fleet). Task and guided study programme.

**Stage 3:** After completion of stage 2: Engine ratings follow a 10 week period of full time study at the FNTC, consisting of the following subjects.

The course content for engine ratings forming part of a navigational watch complies with IMO STCW Convention Regulation II/6.

Course Hours: 300

#### **SYLLABUS OUTLINE**

- Principles of Marine Propulsion



- Applied Mathematics
- Machining Theory/Practice
- Workshop Theory/Practice
- Marine Refrigeration Plants
- English
- Physical Training
- Engine Watchkeeping Practice.

**Stage 4:** One year out of the school to continue with his/her sea-going practical training onboard Domestic trade and international trade.

**Stage 5:** Duration of 10 weeks. This stage provides the student with the suitable level of training to prepare the him/her to be sit for the Engineer Officer-in-Charge of Watch examination conducted by the Marshall Islands Marine Examination Board.

Course Hours: 300

#### **SYLLABUS OUTLINE**

- Marine Machinery Maintenance
- Applied Mathematics
- Machining Theory/Practice
- Workshop Theory/Practice
- Marine Refrigeration Plants
- English
- Physical Training
- Electrotechnology
- Fire Fighting Theory and Practice

- Survival Theory and Practice

## **5.6 ROLE OF THE MINISTRY OF EDUCATION IN THE FNTC.**

### **5.6.1 Award of Certificate for FNTC Graduates.**

The Ministry of Education is the only government body that can grant the student a certificate of attendance after successful completion of the formal training programme. The following points must be considered in obtaining approval of the M.I.M.R.A. for Certificates of Attendance to be issued to graduates.

- Instructors: educational and training background
- Standard of facilities including equipment, teaching materials and aids
- Availability of textbooks and journals supporting subjects (library resources)
- Number of curriculum units
- Curriculum planning
- Training methodology
- Registration and examination system
- Monitoring of standards

At present the training Centre does not fulfil some of these criteria. The number of textbooks related to the key subjects is insufficient. Essential equipment is lacking: basic teaching aids, text books and workshop equipment, as mentioned earlier.

### **5.6.2 General Education**

Besides the awarding of certificates, the training centre should also request the Ministry of Education to release their staff to teach the subjects of English Language,

Mathematics and Physics as mentioned earlier. Most of these subjects are included in the proposed training programme for cadets and ratings in this chapter and in Chapter 6. The main reasons for introducing general education in the future are as follows:

- to ensure that the training centre will produce well-qualified Marshallese seafarers, cadets and ratings in particular, with an adequate knowledge of English.
- to ensure that the cadets have sufficient knowledge of mathematics to carry out any calculations required in the courses leading to an engine or deck certificate. However, it will be the decision of the FNTC to define the level of mathematics that will be given to the students since this is not explicitly required by the STCW convention.

## **CHAPTER 6**

### **PROPOSED PROGRAMS FOR THE FISHERIES AND NAUTICAL TRAINING CENTRE (FISHING VESSELS)**

#### **6.1 PROPOSED STRUCTURE FOR FISHERIES TRAINING**

The total period of education for fishermen (both deck and engineer) covers 3 years and 2 months, which are divided into 1 year and 3 months at the school with theoretical studies, including workshops, and 2 years of practical training on board fishing vessels. Figure 6.1 shows the proposed formal educational structure for the training of personnel for fishing vessels with a length of up to 24 metres.

In this chapter, the proposed curriculum and educational structure comply with the document for guidance on fishermen's training and certification and STCW requirements. The required periods of practical training is between the first, second and third stages of the education which would enable the students to obtain a good understanding of safety and watchkeeping routines. This formal education will prepare fishermen for the following certificates of competency :

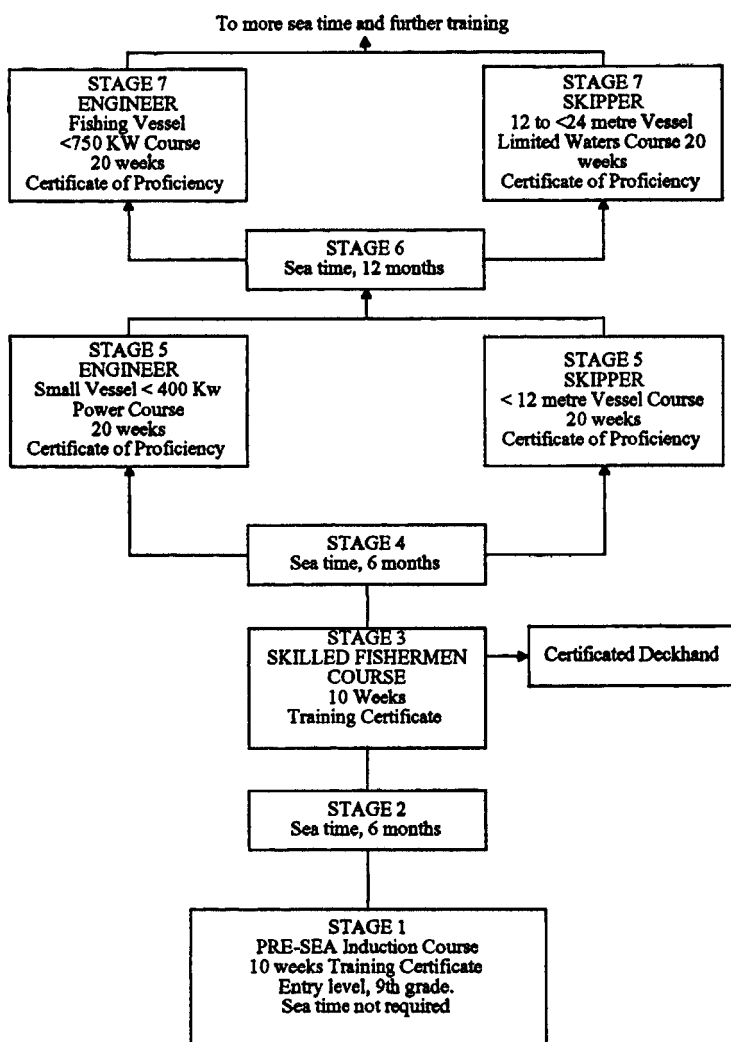
- Certificate of Competency for Skipper Class 3 in charge of a fishing vessels up to 24 metres in length (up to 200 nautical miles) or second in command of a fishing vessel less than 80 metres in length.
  
- Certificate of Competency for Marine Engineer Class 2 (MED 2) fishing vessels with a main propulsion power of less than 750 Kilowatts operating in Marshall Islands waters.

For details of minimum safety manning for fishing vessels in Australian waters, refer to Appendix B.

The education programme for deck and marine engineering fishermen consists of 7 stages leading to the above certificate of competency. The stages are described below.

Figure - 6.1

### Proposed Training of Personnel for Fishing Vessels up to 24 Metres in Length



## **6.2.1 Proposed Deck Course Structure:**

### **6.2.1.1 Pre-induction Course**

**Stage 1:** A 10-week pre-induction ratings training course involving full time study at FNTC. This is a common course for all ratings mentioned earlier. (see chapter 5, section 5.5.1.1 stage 1).

**Stage 2:** Six months out of the school for sea-going training on board fishing vessels within the Marshall Islands Water.

### **6.2.1.2 Skilled Fisherman Course**

**Stage 3:** After completion of Stage 2. a deck fisherman follows a 10-week skilled fisherman course at the FNTC incorporating the following subjects.

Course Hours: 300

#### **SYLLABUS OUTLINE**

- Fisheries English
- Applied Mathematics
- Meteorology and Oceanography
- Economics
- Fishing Gear Construction
- Fishing Technique
- Fish Handling
- Fishing Vessel Management
- Maintenance of Fishing Equipment
- Navigation Safety
- Manoeuvring

- Communication
- Emergency Procedures
- Fishing Vessel Construction and Stability
- Prevention of Marine Pollution
- Auxiliary Fishing Equipment and Maintenance
- Principle of Internal Combustion Engine
- Handling and Maintenance
- Basic Refrigeration
- Electricity
- Search and Rescue
- First Aid at Sea
- Maritime Law

**Stage 4:** Six months out of the school for further sea-going training on board fishing vessels before entering stage 5.

### **6.2.1.3 Skipper Course for Fishing Vessels less than 24 metres in length (Class 5 Master), 100 nautical miles.**

**Stage 5:** After completion of stage 4, the deck fisherman will be allowed to enter this stage for a 20 week period of full-time study at the FNTC before the student sits for the Certificate of Competency Class 5.

Course Hours: 600

### **SYLLABUS OUTLINE**

- English
- Applied Mathematics
- Navigation

- Navigation Safety
- Communication
- Emergency Procedures
- Fishing Vessel Construction and Stability
- Prevention of Marine Pollution
- Fishing Ground
- Fishing Methods and Gear
- Fishing Technique
- Fish Technology
- Maritime Law
- IMO Model Courses 1.20, 1.23

**Stage 6:** One year out of the school for further sea-going training on board fishing vessels before entering stage 5.

**6.2.1.4 Skipper Course for Fishing Vessels less than 24 metres in length (Class 5 Master), 200 nautical miles.**

**Stage 7:** After completion of stage 6, a deck fisherman will be allowed to enter this stage, a 20 week period of full time study at the FNTC, before the student sits for the Certificate of Competency Class 5.

Course Hours: 600 hours

### **SYLLABUS OUTLINE**

- English
- Applied Mathematics
- Navigation



- Fishing Ground
- Fishing Gear Design and Calculations
- Fishing Ground and Session
- Fishing Technique
- Fish Technology
- Search and Rescue
- Maritime Law
- IMO Model Courses 1.14, 1.20 R, 1.23

## **6.2.2 Proposed Engine Course Structure:**

### **6.2.2.1 Pre-induction Course**

**Stage 1:** A 10-week pre-induction ratings training course of full time study at FNTC. This is a common course for all ratings mentioned earlier see Section 5.5.1.1 stage 1).

**Stage 2:** Six months out of the school for sea-going practice on board fishing vessel in Marshall Islands waters.

### **6.2.2.2 Skilled Fisherman Course**

**Stage 3:** After completion of Stage 2, engineer fishermen follow a 10-week skilled fisherman course at the FNTC. This is a common course for all fisheries students before proceeding on to their main target course (see Section 6.2.1.2).

**Stage 4:** 6 months out of the school for further sea-going training on board fishing vessels before entering stage 5.

### **6.2.2.3 Engineer Course for Fishing Vessels with main propulsion less than 400 KW.**

**Stage 5:** After completion of stage 4, the engineer fisherman will be allowed to enter this stage, a 20-week period of full time study at the FNTC, before he/she sits for the Certificate of Competency MED 3.

Course Hours: 600

#### **SYLLABUS OUTLINE**

- English
- Applied Mathematics
- Fishing Gear Material
- Fishing Technique
- Fishing Technology
- Fishing Vessel Construction and Stability
- Engine Trouble Shooting and Maintenance
- Full Injection System in Diesel Engine
- Tools
- Electricity
- Refrigeration
- Workshop Work
- IMO Model Courses 1.20, 1.23

**Stage 6:** One year out of the school for further sea-going training on board fishing vessels before entering stage 5.

### **6.2.2.4 Engineer Course for Fishing Vessel main propulsion less than 750 KW.**

**Stage 7:** After completion of stage 6, the engineer fisherman will allowed to enter

this stage, a 20-week period of full time study at the FNTC, before he/she sits for the Certificate of Competency MED 2.

Course Hours: 600 hours

### **SYLLABUS OUTLINE**

- English
- Navigation
- Fish Gear Material
- Fishing Techniques
- Fishing Technology
- Search and Rescue
- Main Engine
- Electricity
- Refrigeration
- Auxiliary Engines
- Workshop Practice
- IMO Model Courses 1.14, 1.20 R, 1.23

## **CHAPTER 7**

### **DEVELOPING FACILITIES & RESOURCES**

#### **7.1 PROPOSED EXPANSION OF THE TRAINING FACILITIES**

The present Fisheries Training Centre training facilities and equipment are inadequate to train sufficient maritime personnel of the Marshall Islands to meet the demand for the next five year development period mentioned in chapter 4. To comply with the STCW Convention requirements, the author has developed a outline of the proposed expansion plan for developing the country's current training facilities to meet the new demand for Marshallese seafarers.

The main objectives of the proposed expansion plan for the FTC in the Marshall Islands are as follows:

- 1) To develop an integrated training system which will provide well-trained crew members for fishing vessels and commercial trade ships.
- 2) To provide a preparatory course for the approximate total of 60 non-certificated officers, opening the way for them to apply for national licensing examinations, as discussed in chapter 4.
- 3) To confirm that the Marshall Islands forthcoming implementation of the STCW Convention is supported by concurrent improvements in FTC training, particularly for ratings and officers (both deck and engineers), so that the

training conforms with the standards and regulations laid down by IMO through the STCW convention.

- 4) To increase the annual intake of trainees, so that the total current and future demand can be covered by the training centre.
- 5) To provide the necessary accommodation for outer-island students in the future.

A layout of the proposed expansion is shown in Figure. 7.1.

In order to upgrade the training standards and meet the foregoing objectives, the former cabinet building should consist of the following facilities.

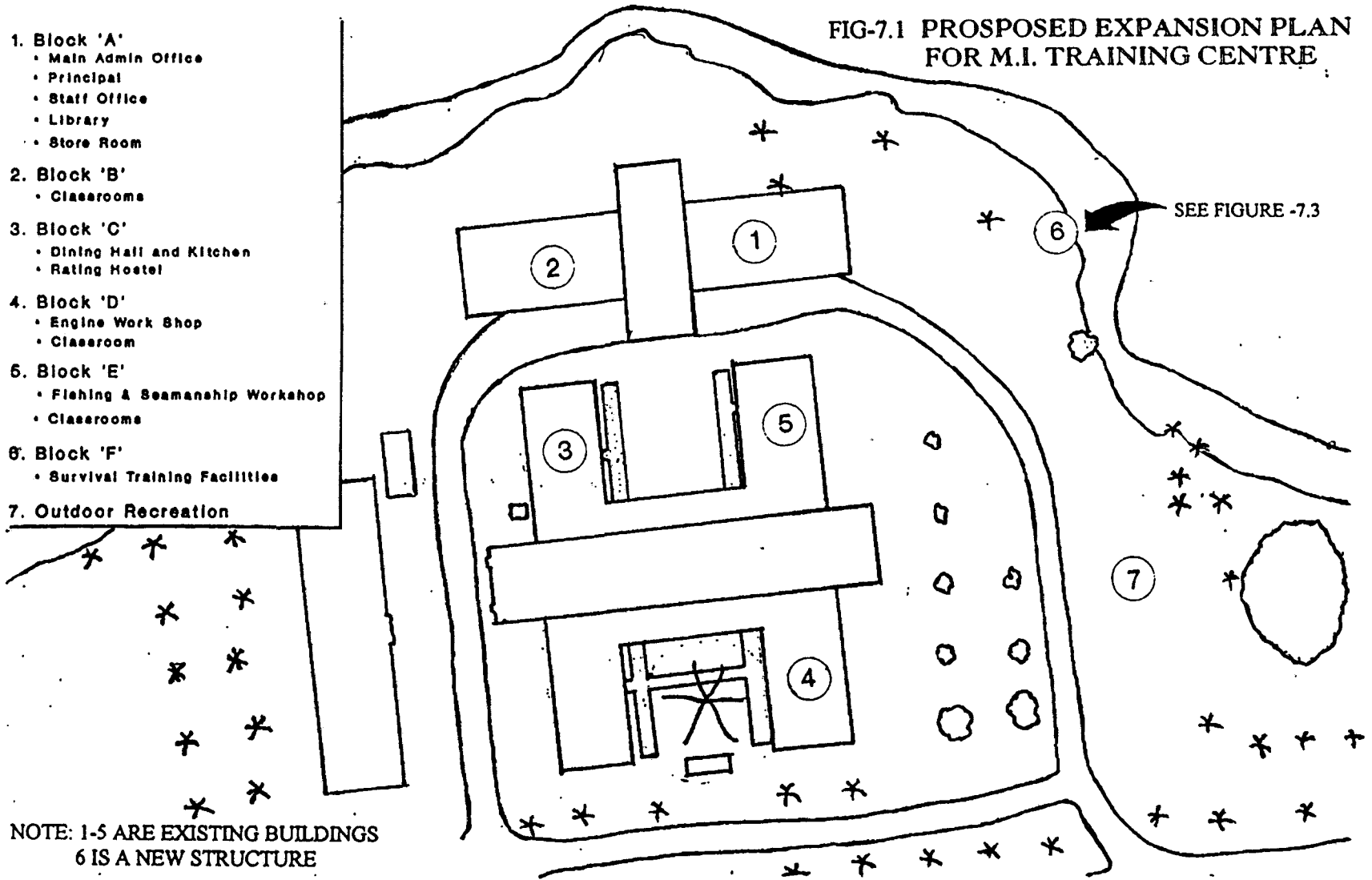
### **7.1.1 Fisheries and Nautical Training Building:**

#### **7.1.1.1 Classrooms and Workshops**

<b><u>Quantity</u></b>	<b><u>Description</u></b>
1...	A Library of approximately 280 M <sup>2</sup> , with a collection target of 3000 books and 100 Serials by the end of 1997.
1...	Engineering Workshop including storage area. The workshop should be well equipped with machine lathes, drilling and milling stand, tools and work benches, the equipment generally found in a ship's workshop, a selection of small diesel engines, inboard/outboard motors, pumps, and auxiliary equipment. The workshop should also be provided with a welding and burning bay, and associated supporting tools and equipment

**FIG-7.1 PROPOSED EXPANSION PLAN FOR M.I. TRAINING CENTRE**

- 1. Block 'A'
  - Main Admin Office
  - Principal
  - Staff Office
  - Library
  - Store Room
- 2. Block 'B'
  - Classrooms
- 3. Block 'C'
  - Dining Hall and Kitchen
  - Rating Hostel
- 4. Block 'D'
  - Engine Work Shop
  - Classroom
- 5. Block 'E'
  - Fishing & Seamanship Workshop
  - Classrooms
- 6. Block 'F'
  - Survival Training Facilities
- 7. Outdoor Recreation



NOTE: 1-5 ARE EXISTING BUILDINGS  
6 IS A NEW STRUCTURE

- 1....Fishing and seamanship workshop including a fishing gear store. The workshop should be well equipped with the facilities to train students in ropes and wire work, net making and repairing, and in maintenance support.
- 6....Classrooms for general purpose teaching equipped with whiteboard, overhead projector and screen.
- 1....Classroom, as above, with 15 desks 1.8<sup>M</sup> x 1.0<sup>M</sup> for navigation work.
- 1....Classroom with blackout screen and provision for audio-video projector.

**7.1.1.2 Administrative Block:**

<u>Quantity</u>	<u>Description</u>
2....rooms	Principal's office and administration support.
3....rooms	Instructor's office ( Navigation, Fisheries and Marine Engineer)

**7.1.1.3 Other facilities:**

<u>Quantity</u>	<u>Description</u>
1....	Catering facilities and dining hall, for up to 60 persons.
1....	building accommodation for up to 24 students.
1....	Student recreation room and outdoor facilities.

**7.1.1.4 Fire Fighting Facility:**

As mentioned earlier in chapter 3, the former cabinet buildings are not a suitable place to build a fire fighting facility to train maritime personnel. At this stage, such a facility this building is urgently needed to upgrade the standard of training in the

Marshall Islands. Consequently, the author considers that it is necessary to survey Majuro for a suitable place to build this structure.

The FTC fire fighting facility will not only provide training for maritime personnel, but also for shore personnel such as the national police fire brigades, the local police, and local industry and emergency response groups. It could be jointly managed with these organizations.

In order to construct a fire-fighting facility for the FNTC, the author has provided sketches and diagram shown in Figure 7.2. To reduce cost, the author recommends that the work be completed in 3 stages.

**Stage 1** should be constructed and fitted with the following:

1. A Hard Pad Area measuring 10m x 10m, of concrete fitted with sump well to handle run-off from fire fighting.
2. 2 steel fire trays approximately 1m x 1m x 0.3 m
3. 2 three-sided brick fire trays
4. 2 fire hydrants with 2 outlets each, providing a pressurized water jet from the fire pump.
5. 3 dummies for search and rescue procedures.
6. An adequate supply of carbonaceous and hydrocarbon fuels (wood, diesel and lubricating oils, etc. ) for the fire trays.
7. A selection of fire extinguishers, fire hoses and nozzles.
8. A smoke tunnel
9. 3 SCBA breathing apparatuses
10. Supporting maintenance and spares



**Stage 2** A mock ship superstructure should be constructed from two old steel containers that should be placed one on top of the other measuring 18 m x 20 m. The containers should be divided into two rooms containing the following:

1. cabin
2. corridor/open room
3. electrical switch board room
4. engine room with grating floor.

**Stage 3** The later development shown in Figure 7.2 on next page includes a steel ship fire fighting structure and means of handling gas fires.

#### **7.1.1.5 Survival Training Facility**

Survival training facilities have not yet been established to satisfy Chapter VI ("Proficiency in Survival Craft") of the 1978 STCW Convention which provides mandatory minimum requirements for the issue of certificates of proficiency in survival craft. At present the centre does not have the necessary equipment required to train Marshalllese masters and deck officers to have a thorough knowledge of organization of abandon ship drills, life-saving appliances includes liferafts and other aspects of life-saving. In addition, ratings should have practical knowledge of life-boats, liferafts and their equipment in survival at sea.

Resolution 19 on the training of seafarers in survival techniques, recommends that every prospective seafarer, before being employed on a sea-going ship, should receive approved training in personal survival techniques.

Consequently, to comply with these requirements of the STCW Convention special

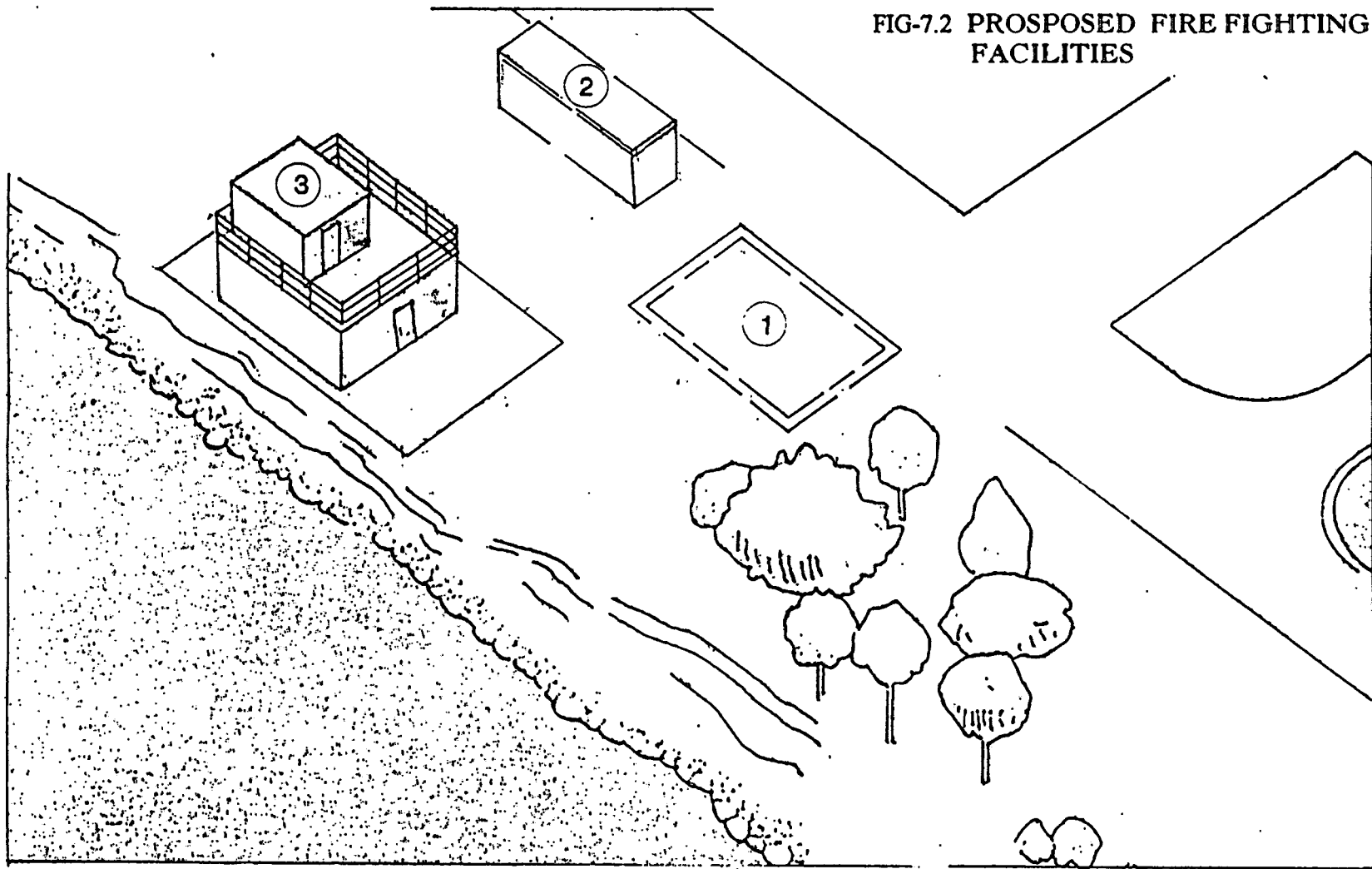


FIG-7.2 PROSPOSED FIRE FIGHTING FACILITIES

training areas and facilities must be set up before Marshallese seafarers can be issued certificates of proficiency in survival craft.

Figure 7.3 on next page provides a layout plan of the proposed survival training centre and equipment prepared by the author with a view to establishing an excellent survival training centre in the country.

The author recommends that the FNTC implement stages 1 and 2.

**Stage 1** A jetty should be constructed and be fitted with a set of gravity davits mounted as on ship, with electric winch recovery gear, fitted with a enclosed and a conventional lifeboat. The jetty area should be used for fishing net storage, the inflation of life rafts, boat maintenance, and boat maneuvering, etc.

**Stage 2** In association with the jetty, a platform should be built approximately 3 metres high, fitted with a single davit with an electric winch for the launch of survival craft into the sea.

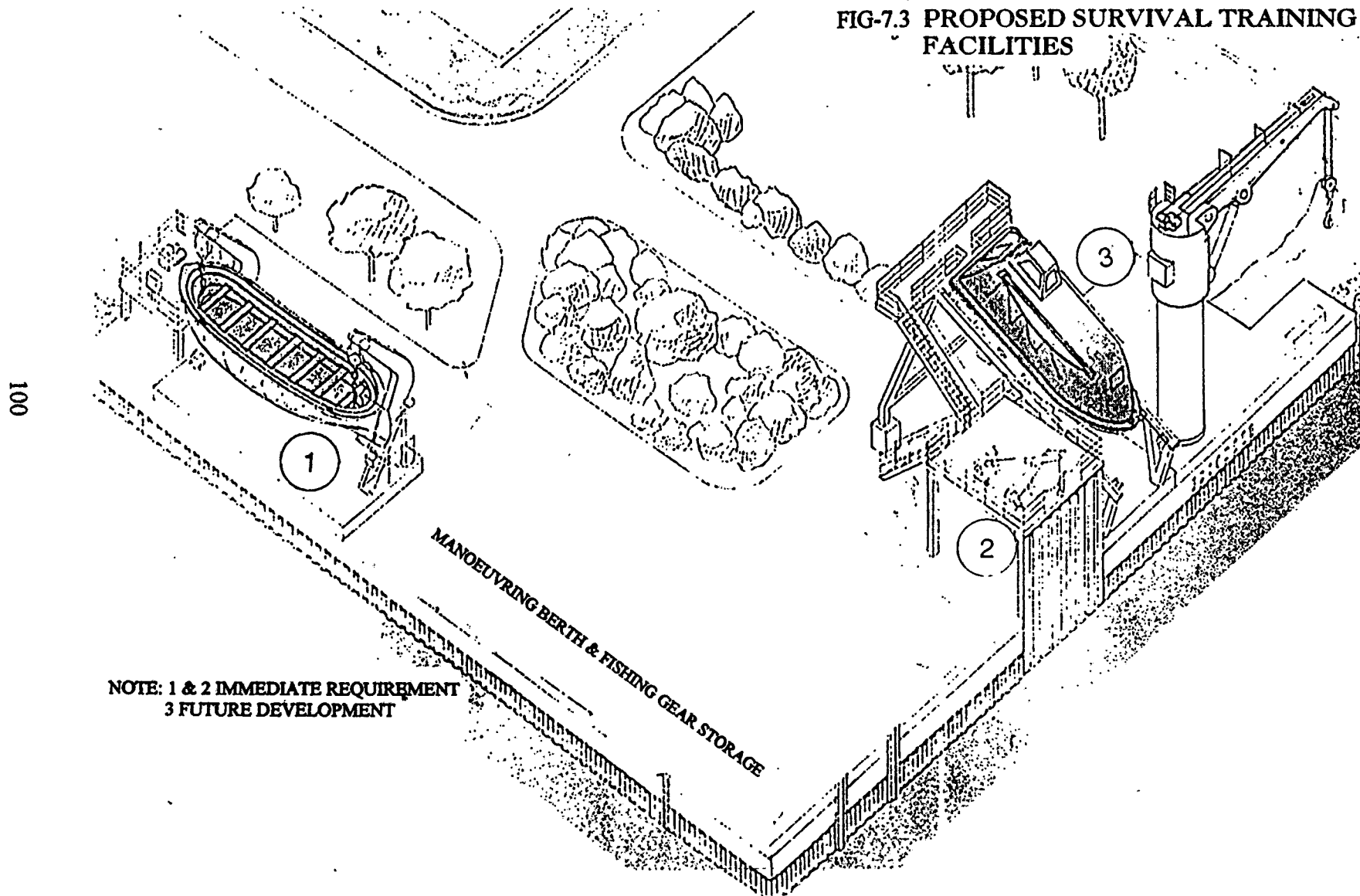
**Stage 3** This involves the installation of TELB equipment and associated launching facilities.

In order to fully comply with STCW and SOLAS Chapter III requirements, stage 3 will require aid funds to support the considerable cost of installing TELB equipment.

## **7.2 PROPOSED STAFF DEVELOPMENT PLAN FOR FNTC**

Increasing the number of students enrolled to meet the demand for Marshallese

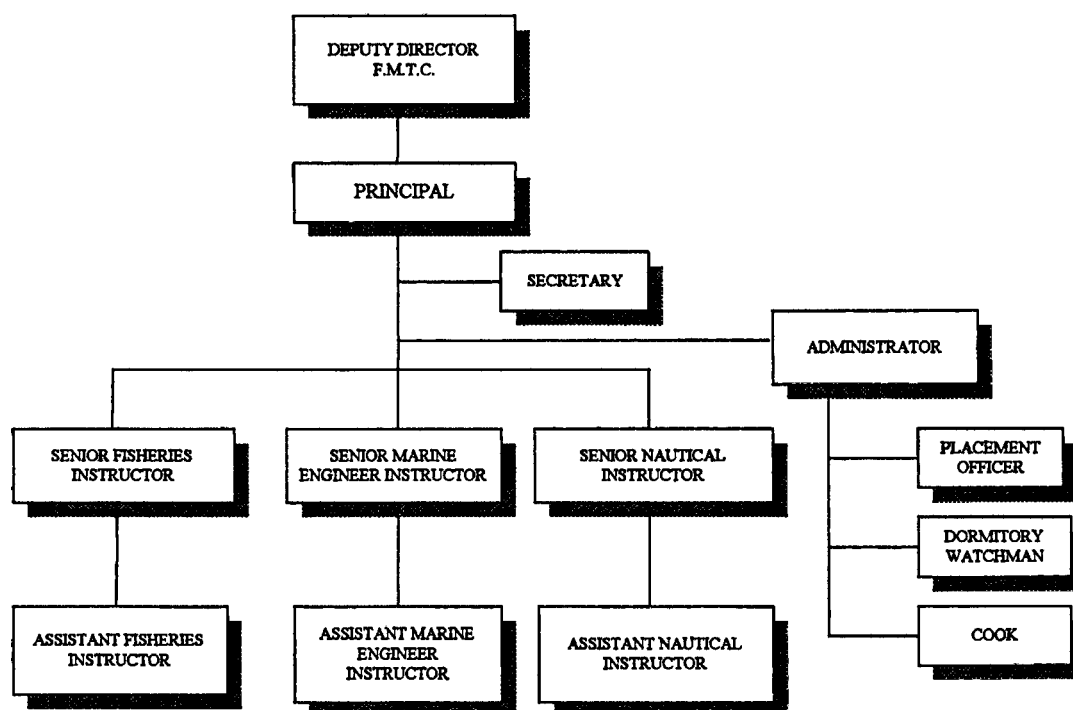
FIG-7.3 PROPOSED SURVIVAL TRAINING FACILITIES



NOTE: 1 & 2 IMMEDIATE REQUIREMENT  
3 FUTURE DEVELOPMENT

seafarers has been examined in Chapter 5. The staff who are currently employed are insufficient for FNTC to become a fully operational training institution in conformity with international standards. It is, therefore, suggested that M.I.M.R.A. should consider recruiting at least 3 more local assistant lecturers for the three departments. As well, 4 non-teaching staff would be required as permanent staff attached to the existing permanent staff for FTC in order to combine the fisheries and nautical training centres. The proposed structure and organization for FNTC permanent staff requirements is shown below with the various departments and positions:

**Figure - 7.4**  
**Proposed Organizational Structure for**  
**Fisheries Nautical Training Centre**



Nevertheless, other options are available for developing staff skills to improve the functioning and quality of FNTC training programmes. M.I.M.R.A. FNTC Centre should establish a coordination and collaboration program with Government Ministries such as the Ministry of Education, Ministry of Transportation and Communications, Ministry of Health and Environment and Sea Patrol Base under the supervision of the Ministry of Justice. Some of these departments are willing to consider "in kind" donations in the form of providing part-time and/or full time instructors to FNTC as supportive lecturers without additional income. Partial reliance on external supportive lecturers is not necessarily a disadvantage since the school's requirement is to provide adequate training for Marshallese seafarers in accordance with international standards. Other factors are that a) it will save the cost of recruiting more permanent staff and b) It will reduce the heavy working load for the FNTC lecturers. However, their teaching will be coordinated by the FNTC management to ensure that all training programs are functioning to improve the quality of training in the country.

At this stage, some of these departments have mentioned the possibility of participating in the Training Centre to support FNTC short courses or upgrading courses for Marshallese officers by supplying their experienced staff.

In order to assure qualified staff from these Ministries, FNTC should adhere to the proposed recruitment procedures for external posts ( see Section 7.2 ) . However, these Ministries should ensure that the persons selected by them would be available for teaching for a time span acceptable to FNTC and that the instructor is willing to follow the course curriculum in his/her subject to ensure continuity and reduce inconsistency in the teaching process. It is important that these Ministries guarantee a staff member's availability for longer periods of time, until the school has an adequate staff of its own. However, M.I.M.R.A. FNTC should established contacts with Government Ministries for further discussion on the number of support staff

required in the future.

The number of the external support staff required from the following Ministries to support FNTC permanent staff to cover the key departments, such as nautical, marine engineer, fisheries and other number of subjects is shown in Table 7.1.

**TABLE 7.1 SUPPORT STAFF REQUIREMENT FOR FNTC**

<b>SUBJECTS</b>	<b>NO. OF EXTERNAL STAFF</b>	<b>GOVERNMENT MINISTRIES</b>
Mathematics	1	Education
English	1	Education
First Aid Course	1	Health & Environment
Fire Fighting Course	2	Sea Patrol Base
Preparatory Course	2	Transportation & Communications

The following draft guidelines for recruitment of external experts from outside are proposed to ensure improved quality as well as long-term attachment of external expert instructors.

- 1) Expert external instructor candidates for posts as senior instructors at FNTC should commit themselves to a continuous period of posting of at least 3 years instead of 1 year during the setting up of the institution since the country does not have adequate experts teaching staff.
- 2) The applicant should have practical experience in the merchant marine or fisheries sector. Emphasis should be put on recruiting personnel with up-to-date experience.

- 3) M.I.M.R.A. management should establish more proper , reliable and effective ways of communicating through any maritime institution within the Asian Pacific Region regarding vacant external posts at FNTC in the future.

It is hoped that the introduction of new procedures for selecting external experts' teaching posts in the future will increase the number of applicants for these posts, due to, inter alia, the improved flow of information.

### **7.3 RECRUITMENT OF STAFF FOR FNTC**

In order to get a body of instructors capable of offering the required quality, FNTC must create reasonable working conditions and opportunities (financial, career prospects, professional development, etc.) that provide for the establishment of a permanent group of instructors and ensure continuity in the provision of training by permanent and guest lecturers under and organized pedagogical administration. The instructors must as a minimum possess the following qualifications.

- Sufficient professional (educational) background and teaching capabilities relevant to the subject which she/ he is teaching;
- Relevant experience on merchant marine and fishing vessels; and
- Sufficient competence and effectiveness to keep up with the growing demand for training, including a willingness to adapt the teaching to the changing work conditions and demands on deck and engineer officers.

However, to attract more permanent staff and keep those already employed on



**a permanent basis or contract, the author suggests that the M.I.M.R.A. Training Centre needs to improve the conditions of employment of its staff by offering salary increases and other benefits in order to create a more attractive working environment.**

## **CHAPTER 8**

### **MANAGING THE NEW STRUCTURE**

#### **8.1 PROPOSAL TO ESTABLISH A MARITIME TRAINING BOARD FOR FISHERIES AND NAUTICAL TRAINING**

##### **8.1.2 Proposal:**

It is recommended that a Maritime Training Board be established for the FNTC. The primary purpose of the board would be to establish close links among the Ministry of Educations, the Ministry of Transportation and Communications, shipping companies, and the FNTC. The Board's prime responsibility would be to make recommendations to the government and to implement policies from time to time through the FNTC of the Marshall Islands. The Functions of the board would be as follows:

- To determine and oversee the basic management policy of the school.
- To meet regularly to monitor standards of maritime education programmes.
- To consider recommendation for the development of new courses and the expansion of facilities.
- To collect and maintain statistics relating to merchant marine personnel.

At the present time, there is limited coordination among government ministries, shipping companies and the FNTC. Therefore, it is difficult for the FNTC to achieved its objectives. One of FNTC's objectives is to develop an adequate training facility that will be able to produce qualified Marshallese seafarers to meet the standards of STCW convention through general education. In order to receive support and cooperation, it is critical to have ministries and shipping companies working closely together to form an appropriate system of operation, management and cooperation in building a training centre for the nation.

The Ministry of Education should appoint the Head of the Board.

#### **8.1.2 Formation:**

The establishment of the Board can probably best be accomplished through Cabinet level action. A Cabinet Paper submitted by the Marshall Islands Marine Resources would serve this function.

The name of the committee should reflect its duties. A possible name for the committee is the Marshall Islands Maritime Training Board. (MMTB)

The composition of the Board should include but not necessarily be limited to the representatives of the following:

- Director of M.I.M.R.A.
- Ministry of Transportation and Communications
- Ministry of Education
- Chief of Planning and Statistics Office
- Ministry of R&D
- Trust Company, Majuro

**- Fishing Companies**

In additional, important responsibilities to the government that could made by the MMTB are as follows:

- Preparing national legislation (primary and subsidiary) to incorporate the requirements of the convention and its amendments.
- Updating maritime legislation.
- Establishing a proper system for examination and certification of seafarers.
- Controlling and monitoring levels of education and training.
- Controlling and monitoring of pre-requisites for seafarers as conditions of entry to examinations for certificates of competency.

The Marshall Islands Training Board should hold regular meetings to ensure continuity and give shipowners the opportunity to support and influence the development of the FNTC.

The FNTC should be responsible for coordinating the efforts of the committee including preparation of the meeting agenda and minutes.

## **CHAPTER 9**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **9.1 CONCLUSIONS**

The investigation concludes that the actual education offered by the FMSC and FTC has not so far lived up to the requirements of the STCW Convention.

In spite of the fact that the Marshall Islands has ratified the STCW convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (STCW), it has not implemented it.

FTC does not have the necessary buildings, equipment, or staff to train Marshallese in accordance with the STCW Convention. Thus students have not been given effective training in first aid, fire fighting, survival training or other related subjects. Practical training to improve the standards has not been such as to allow deck and marine engineer training programs to comply with the STCW Convention.

The author has prepared a development plan for the education and training of fisheries, nautical and marine engineer personnel.

The solution to the problems identified in the paper are within grasp if positive action is initiated. However, these problems are critical now and steps should be taken to solve them immediately. Until now it cannot be claimed that deck and

marine engineers at FMSC and FTC have been trained to a level of proficiency that would justify even an approximate assessment by international standards.

## **9.2 RECOMMENDATIONS**

In order to achieve compliance with the STCW requirements, and for the improvement of training, examination and certification in general, the Government of the Republic of the Marshall Islands should adopt the South Pacific Maritime Code as part of the Marshall Islands maritime legislation which includes the International Convention on Standards of Training and Watchkeeping 1978 and other relevant international conventions.

### **9.2.1 Fire Fighting**

- Resources should be provided to ensure that Marshallese seafarers possess adequate practical knowledge in methods and aids of fire prevention, detection and extinction.

### **9.2.2 Personnel Survival (Sea Rescue)**

- Resources should be provided to ensure that Marshallese seafarers possess adequate practical knowledge of the function and use of life-saving appliances and personal survival techniques.

### **9.2.3 Medical Emergency (First Aid)**

- Resources should be provided to ensure that Marshallese seafarers possess adequate practical knowledge of first aid treatment methods related to

injuries which might be expected on board ships, and in the use of first aid equipment.

It is recommended that the Ministry of Health and Environment should cooperate with the maritime training centre to provide first aid courses to satisfy the STCW Convention.

#### **9.2.4 General Education**

- It is strongly recommended that the teaching of general education subjects be provided by the Ministry of Education in the maritime training centre to support the deck and engine training programme.

#### **9.2.5 Placement for Marshallese on board the Marshall Islands Fleet**

In order to provide practical seagoing experience for FNTC on board the increasing number of Marshall Islands flagged ships, Marshall Islands Marine Resources Authority should make arrangements with Trust Company, the Ministry of Transportation and Communications, and fishing companies to provide industrial experience to FNTC students.

It is recommended that the Marshall Islands Marine Resources Authority have available a fishing vessel to accommodate up to 15 students for shipboard training, to compensate for the situation of not enough berths being available.

In order to develop job opportunities for qualified Marshallese seafarers in the future, the Government should introduce a Maritime Act covering minimum levels of employment of Marshallese nationals onboard the Marshall Islands flagged ships

active in international trade so that qualified Marshallese can be gainfully employed.

## **9.2.6 Examinations and Certification**

### **9.2.6.1 Examinations**

To cover STCW Convention Examination and Certification requirements, the Marshall Islands Maritime Administration should comply with the standards of examination and certificates in the South Pacific Maritime Code. This would lead the nation toward a proper examination and certification procedures.

To improve the system of conducting examinations in the country, a Marine Examination Board should be established to oversee standards in theoretical and practical examinations for fisheries, deck and engineer qualification. The board should comprise representatives of Government, industry and FNTC.

A data bank of examination questions for all grades of licences for fishermen and commercial trade should be prepared by the Marine Examination Board and the licensing examination for candidates applying for grade should take place in the fisheries and nautical training centre.

### **9.2.6.2 Certification**

Certificates of Competency for Fisheries and Commercial trade should be issued by the Ministry of Transportation and Communication.



### **9.2.6.3 Minimum Manning**

The Maritime Administration should determine a suitable minimum safety manning standard for the Marshall Islands fleet for the safety and personnel onboard.

### **9.2.7 Recognition of Certificates of Attendance**

Marshall Islands Marine Resources Authority should request the Ministry of Education to recognise the certificate of attendance granted by the Centre for courses of training successfully completed by students.

### **9.2.8 Training Facilities**

In order to meet the demand for the next five years' and to comply with the STCW Convention requirements, the Government of the Marshall Islands is strongly advised to implement the proposals to expand the former cabinet buildings in order to establish adequate maritime training facilities.

A proposal for development of training facilities is provided in chapter 7.

### **9.2.9 Library**

Funds should be provided to establish a core collection of reference material for the library. This includes textbooks and journals to support the adaptation of IMO model courses.

### **9.2.10 FNTC Staff Requirements**

To implement the proposed plan for the FNTC, recommended staffing level required for FNTC to become a fully operational training institution in conformity with international standards is as follows:

#### **1. Permanent staff**

- (1) Principal
- (3) Senior Lecturers comprising nautical, fisheries and engineer ( overseas experts)
- (3) Junior Lecturers comprising nautical, fisheries and engineer ( Local)
- (5) Non-teaching staff.

#### **2. External support staff**

Resources should be provided by the relevant supporting Ministries.

The terms and conditions of M.I.M.R.A. staff should be reviewed to ensure that conditions of employment attract well qualified and dedicated staff.

### **9.2.11 Retraining Local Staff**

M.I.M.R.A. should be responsible for providing training for FNTC local staff lecturers to ensure the availability of qualified local teaching staff in the future. Funds should be made available to provide for the ongoing training of staff, either at the World Maritime University (WMU) in Sweden or at other appropriate maritime training institutions.

### **9.3. FUTURE STRATEGIC DEVELOPMENT**

#### **9.3.2 Accreditation teams**

After development of the FNTC training facilities and the training programmes is fully implemented, it is advisable to look for experienced and competent visiting monitoring team member(s) from developed country institutions such as the Australia Maritime College or United State Maritime Academies to examine the standards achieved, using the resources of IMO.

The ultimate objective of evaluation is to verify improvements in the standard of training in the nation to meet the requirements of the 1978 STCW Convention (as amended) and to seek recognition of the training centre by IMO, as well as recognition of FNTC programs so that graduates can enrol at overseas institutions for further higher qualifications.

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**ITF's ( International Transport Works' Federation) Minimum Safe  
Manning Scales in Accordance with IMO Standards.**

Manning Scale No. 1

Proposed manning scale for a cargo ship of 200 to 499 GRT with periodically unmanned engine room and trading world wide:

1 Master  
2 Deck Officers  
3 Deck Ratings  
1 Chief Engineer \*)  
1 Motorman  
1 Cook

-----  
9-10 one of whom has medical training beyond first aid training.

\*) For ships of a propulsion power of 1500 KW add one Engineer

Manning Scale No. 2

Proposed manning scale for a cargo ship of 500 to 1599 GRT with periodically unmanned engine room and trading world wide:

1 Master  
3 Deck Officers \*)  
4 Deck Ratings \*) \*\*\*)  
1 Chief Engineer  
2 Engineer Officers \*) \*\*) \*\*\*\*)  
1 Engine Room Rating \*\*\*\*)  
1 Chief Steward/Cook  
1 Steward/Stewardess

-----  
11-16 one of whom has medical training beyond first aid training.

\*) If a properly negotiated relief system is in operation based on one to one system and with a maximum period of service on board 2 months, the manning can be reduced by one Deck Officer, one Engineer (in ships of more than 1500 KW propulsion power) and one Deck Rating

\*\*\*) In ships of less than 1500 KW propulsion power it is only necessary to have two Engineer Officers on board the ship

\*\*\*\*) One of which may be a Junior/Entry Rating taking into consideration the varying training practices in different countries

\*\*\*\*\*) At times when it is necessary to stand continuous conventional watches the manning scale shall be increased by one Engineer Officer and one Engine Room Rating

Manning Scale No. 3

Appendix A (Cont'd)

Proposed manning scale for a cargo ship of 1600 to 5999 GRT with periodically unmanned engine room and trading world wide:

1 Master  
3 Deck Officers  
1 Bosun  
3 A.B.s  
2 OS/Junior/Entry Ratings  
1 Chief Engineer  
2 Engineer Officers \*)  
1 Electrician/Electrical Engineer Officer  
1 Repairman  
1 Engine Room Rating \*)  
1 Junior/Entry Rating  
1 Radio Officer  
1 Chief Steward  
1 Cook  
1 Cook/Steward  
1 Steward/Stewardess

-----  
22-24 one of whom has medical training beyond first aid training.

\*) At times when it is necessary to stand continuous conventional watches the manning scale shall be increased by one Engineer Officer and one Engineer Rating

Manning Scale No. 4

Proposed manning scale for a cargo ship of 6000 to 11999 GRT with periodically unmanned engine room and trading world wide:

1 Master  
3 Deck Officers  
1 Bosun  
3 A.B.s  
2 OS/Junior/Entry Ratings  
1 Chief Engineer  
2 Engineer Officers \*)  
1 Electrician/Electrical Engineer Officer  
1 Repairman  
2 Engine Room Rating \*)  
1 Junior/Entry Rating  
1 Radio Officer  
1 Chief Steward  
1 Cook  
1 2nd Cook  
1 Cook/Steward  
1 Steward/Stewardess

-----  
24-26 one of whom has medical training beyond first aid training.

\*) At times when it is necessary to stand continuous conventional watches the manning scale shall be increased by one Engineer Officer and one Engineer Rating



Manning Scale No. 5

Appendix A (Cont'd)

Proposed manning scale for a cargo ship of 12000 GRT and over with periodically unmanned engine room and trading world wide:

1 Master  
3 Deck Officers  
1 Bosun  
3 A.B.s  
3 OS/Junior/Entry Ratings  
1 Chief Engineer  
2 Engineer Officers \*)  
1 Electrician/Electrical Engineer Officer  
1 Repairman  
2 Engine Room Rating \*)  
1 Junior/Entry Rating  
1 Radio Officer  
1 Chief Steward  
1 Cook  
1 2nd Cook  
1 Cook/Steward  
1 Steward/Stewardess

-----  
25-27 one of whom has medical training beyond first aid training.

\*) At times when it is necessary to stand continuous conventional watches the manning scale shall be increased by one Engineer Officer and one Engineer Rating

Manning Scale No. 6

Proposed manning scale for 50 GRT to 500 GRT tug-towing vessels involved in towing operations with periodically unmanned engine rooms shall be:

1 Master  
2 Deck Officers  
3 Deck Ratings \*)  
1 Chief Engineer  
1 Engineer \*\*)  
1 Motorman/Engine Rating \*\*)  
1 Cook

-----  
10-13 one of whom has medical training beyond first aid training.

\*) Those vessels involved in transporting petroleum products add one Tankerman

\*\*) Those vessels not equipped with periodically unmanned engine rooms add one Engineer and one Entry Engine Rating  
Tugs over 500 GRT shall carry the same manning as cargo ships of the same GRT.

PARTICULAR PROVISIONS - FISHING VESSELS - MINIMUM SAFETY MANNING

COLUMN 1 Vessel Size	COLUMN 2 Operational Area	COLUMN 3 TOTAL COMPLEMENT	COLUMN 4 MASTER	COLUMN 5 CHIEF MATE	COLUMN 6 OTHER
80 metres & over	Unlimited	As	determined	by the Authority	
	Australian Coastal & Middle Waters	As	determined	by the Authority	
	Offshore	As	determined	by the Authority	
35 metres and over, but less than 80 metres	Unlimited	As	determined	by the Authority	
	Australian Coastal & Middle Waters	6	S1	S2	4
	Offshore (200nm)	5	S2	S3	3
	Offshore (100nm)	5	S2	S3	3
	Inshore	4	S2	—	3
24 metres and over, but less than 35 metres	Unlimited	As	determined	by the Authority	
	Australian Coastal & Middle Waters	5	S2	S3	3
	Offshore (200nm)	4	S2	S3	3
	Offshore (100nm)	4	S2	—	3
	Restricted Offshore (30nm)	3	S2	—	2
12 metres and over, but less than 24 metres	Unlimited	As	determined	by the Authority	
	Australian Coastal & Middle Waters (see Note 2)	¼	S2	S3	½
	Offshore (200nm) (See Note 2)	¼	S3 endorsed (note 3)	S3	½
	Offshore (100nm) (See Note 2)	¾	S3	—	½
	Restricted Offshore (20nm)	2	S3	—	1
Less than 12 metres	Unlimited	As	determined	by the Authority	
	Australian Coastal & Middle Waters	As	determined	by the Authority	
	Offshore (200nm)	¾	S3 endorsed (note 3)	S3	1
	Offshore (100nm) (See Note 1)	½	S3	—	½
	Inshore	1	Coxswain	—	—

Note 1: An additional person is required when length of voyage exceeds 12 hours.

Note 2: Engineer table over page indicates the number of and minimum engineer qualifications required, indicated by propulsion power of a vessel and operational area. These are included in this table in the minimum complement (Column 3).

Note 3: Endorsement to 200nm issued on completion of examination in Navigation and Position Determination of Skipper Grade 2.

**PARTICULAR PROVISIONS – FISHING VESSELS – MINIMUM SAFETY MANNING**

COLUMN 1 Propulsion Power	COLUMN 2 Operational Area	COLUMN 3 Chief Engineer	COLUMN 4 Other Engineers
Vessels of 1500 kW and over	Unlimited Australian Coastal & Middle Water Offshore (200nm) Inshore	As determined As determined As determined As determined	by the Authority by the Authority by the Authority by the Authority
Vessels of 750 kW and over but less than 1500 kW	Unlimited Australian Coastal & Middle Water Offshore (200nm) Restricted Offshore (30nm)	As determined Class 3 Class 3 MED 1	by the Authority MED 1 MED 2 —
Vessels of 500 kW and over, but less than 750 kW	Unlimited Australian Coastal & Middle Waters Offshore (200nm) Inshore (15nm)	As determined MED 1 MED 1 MED 2	by the Authority MED 2 — —
Vessels of 250 kW and over but less than 500 kW	Unlimited Australian Coastal & Middle Waters Offshore (200nm) Inshore (15nm)	As determined MED 1 MED 2 MED 3	by the Authority — — —
Vessels less than 250 kW	Unlimited Australian Coastal & Middle Waters Offshore (100nm) Inshore (15nm)	As determined MED 2 MED 3 COXSWAIN	by the Authority — — —