South Pacific uniform maritime standards code and its impact on maritime training and education in Fiji

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THE SOUTH PACIFIC UNIFORM MARITIME STANDARDS CODE AND ITS IMPACT ON MARITIME TRAINING AND EDUCATION IN FIJI

by

Netani Sukanaivalu
Fiji

A paper submitted to the Faculty of the World Maritime University in partial satisfaction of the requirements for the award of a MASTER OF SCIENCE DEGREE in MARITIME EDUCATION AND TRAINING (ENGINEERING).

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

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ABSTRACT

Although the new revised South Pacific Uniform Maritime Standards Code is not itself a legal document, its main purpose is to provide uniform standards for seafarers which Fiji can use for its national maritime legislation. The standards contained in the Code are the STCW 78 Convention minimum requirements and Fiji being a member country is expected to comply.

The School of Maritime Studies is already established and owned by the Fiji Government. It is administered by the Ministry of Education while the EPUMS Code is under the control of the Ministry of Transport and Works.

The subject of manpower development in the maritime industry of Fiji to meet the Code is therefore one that is in need of urgent attention and so the purpose of this project is to direct attention to it, to identify the main problems associated with it and to offer constructive suggestions concerning it.

In the achievement of these ends, the author examines the international provision for training, the relevant maritime laws and regulations of Fiji, the marine school already established and the general maritime training in the Country. Using his experience with the training system in Fiji and some other countries, and his knowledge gained at the World Maritime University, he then highlights the lessons to be learned and proposes possible solutions to the main problems identified.
PREFACE AND ACKNOWLEDGEMENT

The concert of the South Pacific Uniform Maritime Standards' Code was drawn up as a result of a decision by the Regional Shipping Council in 1977 to establish an Advisory Committee and develop a Code on Uniform Maritime Standards.

The Advisory Committee was established in 1978 and, at that time, represented a major step forward in the examination, certification and upgrading of standards for the South Pacific countries.

Since then, the South Pacific countries have decided that high standards of qualification should be required especially for foreign trade vessels. The syllabuses and sea service requirements were based mainly on the UK, Australia and New Zealand standards, then current in those countries with somewhat lower standards employed for the local and inter-island trade certificates.

The introduction of the STCW Convention in 1978 provided minimum internationally recognised regulations to be observed in the manning and operation of ships of various sizes and trades with requirements and outline syllabuses for the issue of certificates of Competency to masters, chief engineers, deck and marine engineer officers and ratings.

The Advisory Committee decided to revise the Code to align with the STCW 78 Convention. This was agreed and accepted in 1984 based on the following factors:
- the STCW 78 Convention represents international standards for manning of ships. Conforming with those standards will enable South Pacific countries to maintain recognition and status on the international maritime scene;

- adoption of internationally recognised STCW type certificates will increase employment opportunities for South Pacific officers and crews in foreign flag ships;

- as the STCW 78 Convention becomes adopted worldwide it will be important for South Pacific countries to ensure that their ships are manned in accordance with the Convention in order to avoid delays and detention of those ships in foreign ports.

I have been a member of this Advisory Committee since its establishment in 1978, and been directly responsible for the drafting of the Engineer Syllabuses and Requirements. My interest in the Maritime Transport Administration, which includes education and training, lies in the strong belief that properly organised training of manpower supported by policies and objectives will certainly promote self-reliance.

In order not to live forever under the present maritime infrastructure in this rapid developing shipping economy and high technology, we must start to train our people today.

This citation is presented as a part of the qualifying requirements for the award of a Master of Science Degree in Maritime Training and Education. I wish to express my gratitude and appreciation to my course professor and
supervisor Professor C.E. Mathieu who guided me through this project, however, the contents of this paper reflects my personal view only and are not provided or endorsed by anyone or by the university.

I wish to thank the International Maritime Organisation (IMO) for providing me the fellowship to pursue the two years study at the World Maritime University.

My special thanks to various maritime training and educational institutions in Australia, USA and Europe, including shipping industries which I visited during the training, for their immense co-operation and open door policy.

I should also like to thank the officials within the Government Ministries in my country—PSC Training Division, Marine Department, Education Department and the Commercial Shipping companies for the valuable information furnished during my visits.

I wish to thank my dear mother for her prayers and support during the two years.

And finally, this project is dedicated to my wife Loraini Liku Sukanaivalu for taking care of my family and handling other hardships of life without me during my two years at the University.
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ABREVIATIONS

SPEC   South Pacific Bureau For Economic Co-operation

SPUMS  South Pacific Uniform Maritime Standards

FMB    Fiji Marine Board

AMC    Australia Maritime College

TEC    Technician Education Council

ECOTEC Scottish Technical Education Council

IMO    International Maritime Organisation

STCW   Standard of Training, Certification & Watchkeeping
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1. INTRODUCTION

1.1. Background and Objectives

The Uniform Maritime Standard Advisory Committee in their December 1984 meeting in Suva agreed and accepted the revised South Pacific Uniform Maritime Standard Code (SPUMS).

This revised Code is based on the minimum standards required by the IMO Standard of Training, Certification and Watchkeeping (STCW) 1978 Convention. This Convention came into force in April 1984, and provides on an international scale, minimum standards for seafarer certificate in terms of the level of theoretical and practical knowledge related to their professional understanding and experience.

It is therefore, now the responsibility of the Maritime Administration in Fiji to prepare the necessary requirements for the Code before its ratification and implementation.

Since the Maritime Administration is under the umbrella of the Ministry of Transport and Works, while the School of Maritime Studies is under the Ministry of Education, it is equally essential and important for the Education Ministry to consider the impact of this Code on the School and its training and educational programmes.

This project is therefore prepared and put forward such that the Education Ministry may use it as a guideline to ensure that adequate facilities and training equipments are provided and available to meet and cater to the
The project begins by presenting Fiji as an archipelago state, describing its geographical, historical and economic nature. It discusses the existing shipping industry, the maritime training and education, and endeavours to briefly describe the Government's participation in its maritime infrastructure.

Bearing in mind the capital intensive nature and risks involved in the merchant shipping fleet, the arm of Government that controls the safety, certification and manning of these vessels including training is described in detail.

This area of the Government which is the Marine Department under the Ministry of Transport and Works, the School of Maritime Studies under the Ministry of Education, Youth and Sport are both substantially influenced by certain International Organisations of which Fiji is a member, therefore these organisations are also described.

Then coming to manpower development, the existing and future educational systems of Fiji are examined. The existing maritime training facilities, the process of examination, certification and manning in the merchant shipping fleet are discussed.

The recommended training systems, examination and certification and a recommendation for harmonizing the various maritime training sectors is presented.
The conclusion and recommendations summarise the inadequacies of the present systems. It presents a better and more fruitful approach to eliminating these inadequacies.
2. FIJI

2.1. Geographical Position

Fiji is made of about 332 islands, which vary in size from 10,000 square/kilometres to tiny islets a few metres in circumference. These spread over thousand of square kilometres of ocean in the heart of the South Pacific. Around one third of these islands are inhabited.

The total land area of Fiji is 18,333 square kilometres. The largest island, Viti Levu, is 10,429 square kilometres and the second largest, Vanua Levu, is 5,556 and all others total 2,348 square kilometres.

Fiji lies between 15 degrees and 22 degrees south of the equator. The International Dateline has been diverted to the east of the island group.

Situated in the hub of the Southwest Pacific, Fiji has become the crossroads of air and shipping service between North America, Australia and New Zealand. Travelers and international vessels enter the country via the international airport at Nadi or Nausori or the natural harbours at Suva and Lautoka.

Fiji has accepted many nationalities to its shores and today is rich in diverse cultural backgrounds. Besides Indians and Europeans, Chinese and many Pacific Islanders have found a home in Fiji. Today this blend of peoples from different origins and traditions enjoy peace and harmony in this stable, sovereign and democratic nation.
2.2. History

According to our Fijian Legend, the great Chief Luturasobasoba led his people across the seas to the land of Fiji. Most authorities agree that people came into the Pacific from the Southeast via the Indonesians Islands. Here the Melanesians and the Polynesians mixed to create a highly-developed society long before the arrival of the Europeans.

The first European discovery of the Fiji group were accidental, occurring when the early navigators were on their way elsewhere. The first of these discoveries was made in 1643 by the Dutch explorer Abel Tasman. English navigators, including Captain James Cook who sailed through in 1774, made further explorations in the 18th century.

Major credit for the discovery and recording of the islands goes to Captain William Bligh who sailed through the group after the mutiny on the "Bounty" in 1789.

The first Europeans to land and live among the Fijian were shipwrecked sailors or runaway convicts from Australia penal settlements. Sandalwood traders and missionaries came by the mid-19th century.

From 1879 to 1916, Indians came as indentured labourers to work the sugar plantations. After the indentured system was abolished, many stayed or as independent farmers and business men. Today the Indians outnumber the indigenous Fijians and represent more than half the population.
The 20th century brought about important economic changes in Fiji as well as maturation of its political system. Fiji developed a major sugar industry and established productive copra milling, tourism and secondary industries. The economy has strengthened and revenues provide for expanded public works, medical services and education.

2.3. Economy

The economy is primarily agrarian and sugar is its backbone. Grown mainly on small holdings, the sugarcane is crushed and partly refined by the Government-owned Fiji Sugar Corporation. It accounts for some three quarters of domestic exports. The sugar industry provides employment to about 22% of the labour force.

Other major export earners are gold, copra, fish and coconut oil. Timber, ginger, cocoa, pine and certain processed consumer goods are rising export earners. Tourism, another key sector, is the second largest industry and brings in substantial foreign exchange every year.

The main economic aim of the Government as reflected in the current DPB is to break away from the country's dependence on sugar. It is proposed to be realised by diversifying into broader agricultural products and greater secondary resource based industries.

The capital expenditure has been considerably increased. Government is placing great emphasis on projects which help promote creation of new job opportunities and generation and conservation of foreign exchange. Efforts are
FIJI'S TRADE BY COMMODITY 1984

**IMPORTS (000)**
- Transport & Machinery Equipment
- Manufactured Goods
- Food
- Other
- Raw Materials
- Petroleum Products

$487,105

**DOMESTIC EXPORTS (000)**
- Sugar
- Canned Fish
- All Other
- Coconut Oil
- Other Food

$197,370

TABLE 1
directed to provide a sound infrastructural base conducive to the growth of private sector initiatives and activities and development of basic resources on which the economy will depend in the future. Further tax concession have been allowed to encourage investment in projects supportive to the tourist industry.

At the same time, nevertheless, Government is striving to ensure the substantive growth of the overall economy and to provide encouragement for private sector business and investment both local and overseas.

2.4. Education System

The past two decades have seen great improvements both in the quality and quantity of Fiji education. Nearly 100 percent of primary school age children are in school with classes 1 to 8 receiving tuition free education.

The Government implemented free education in 1973 to class 1 and has added a class for each year afterwards. In 1983, classes 1 to 8 are tuition free for the school children.

The full time school roll for primary and secondary schools in 1984 was 166,617. The number of children in classes 1 to 8 were 123,340 and 43,277 in form 1 to 7.

There are 665 primary schools, 130 secondary schools and 36 technical-vocational schools in the country which includes the Fiji Institute of Technology.
The following are examinations held in the primary and secondary schools:

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Table 2 shows the Fiji education structure.

The University of the South Pacific is situated at Lauca Bay Campus in Fiji. It was established in 1968 and is a regional institution and serves 11 countries:

- Fiji
- Cook Island
- Kiribati
- Nauru
- Niue
- Solomon Island
- Tokelau
- Tonga
- Tuvalu
- Vanuatu and Western Samoa.

There are over 2,000 full time students enrolled in day courses and about 6,000 enrolled in extension courses.
EDUCATION SYSTEM

Tertiary/Vocational Inst.

Old System

Kindergarten

Primary School

Classes 1-8

High School

New System

University

Classes 1-6

Old System

New System

NOTE:

F 1 - Form 1

F 7 - Form 7
There is also an Atoll Research and Development Unit in Kiribati, and a Pacific Language Unit and Pacific Law Unit in Vanuatu. These Institutes frequently run short course of various types, with a total enrolment amounting to about 1,400 a year.
3. PORTS AUTHORITY OF FIJI

3.1. General

Fiji's location in the Pacific makes it the natural focus of the region's shipping services. It is also a major port of call for transpacific container and other cargo services and for thousands of passengers aboard cruise liners. At the same time, local ships are constantly moving between the country's major ports and its many scattered islands.

To guarantee efficient port services and facilities, the Ports Authority of Fiji (PAF), a statutory body, was established by an Act of Parliament on November 1st 1975, to administer the nation's three ports:

1. Suva
2. Lautoka
3. Levuka

Before the Authority was set up, Fiji ports had congestion problems causing delays in ship's turn-around and cargo delivery. Associated problems, such as breakages and pilfering were common because of poor cargo handling.

PAF's steady development programme has re-organised and streamlined operations in the three port. Today, turn-around times have been reduced, cargo is ready for delivery shortly after discharge; damage and pilferage of cargo has been minimized; access to uncleared cargo is facilitated through neat and correct storage; the ports are tidier with an improved working environment.
3.2. Functions

The functions of the Ports Authority are described in the Act of Parliament which created it, these include:

1. to provide and maintain adequate and efficient port service and facilities in ports or the approaches to ports;

2. to regulate and control navigation within ports and the approaches to ports;

3. to promote the use, improvement and development of ports;

4. to co-ordinate all activities of or within ports;

5. to acquire such land and execute such works and do such acts and things as may be necessary in respect of the functions of the Authority under provisions of this Act or of any other written law;

6. subject to the provisions of this Act, to do all things necessary or convenient to be done in connexion with or incidental to the performance of its functions under this Act or any other written law.

3.3. Ports of Entry and Anchorages

There are three ports of entry into Fiji at Suva, Lau-toka and Levuka. Other ports and deep water anchorages are at Malau, Savusavu and Vuda Point.
3.4. Containerisation

Fiji has kept pace with the development of container traffic. Container ships usually have their own heavy equipment to discharge cargo. Suva's multi-million dollar project involves reconstruction and upgrading the wharf to meet modern cargo handling requirements. A new container yard has facilitated container storage and greatly improved manpower efficiency. The port of Suva can now accommodate 534 20ft cargo containers, including eighteen 20ft freezer containers.

3.5. Ship Repair Facilities

Suva has three slipways operated by the Marine Department. They have a capacity ranging from 250 to 1000 tonnes to service vessels. Slipways for smaller vessels are operated by two private ship repair companies.
4. SOUTH PACIFIC BUREAU FOR ECONOMIC CO-OPERATION
(SPEC)

4.1. Introduction

The South Pacific Bureau for Economic Co-operation (SPEC) is an inter-governmental regional organisation established in 1972 by the South Pacific Forum, the gathering of the Heads of Governments of the independent and self-governing countries of the South Pacific. The Forum held its first meeting in Wellington, New Zealand in August 1971. At its second meeting in Canberra in February 1972 firm proposals for a "Trade Bureau" were considered and the South Pacific Bureau for Economic Co-operation was established as a consequence. SPEC, as the Bureau is more commonly known, is located in Suva, Fiji.

4.2. Objectives

In the South Pacific, an area of the world distinguished by small developing Island countries separated by vast expanses of ocean, economic progress and social welfare can benefit from pooling the natural and human resources of the region. The basic objective of SPEC is to encourage and promote regional co-operation in the development of the Island countries of the South Pacific in close partnership with the more industrialised countries of the region: Australia and New Zealand.

4.3. Membership

The formal agreement establishing SPEC was signed in Apia on 17 April 1973 by the Governments of AUSTRALIA.
COOK ISLANDS, FIJI, NAURU, NEW ZEALAND, TONGA and WESTERN SAMOA. These member countries have since been joined by NIUE, PAPUA NEW GUINEA, KIRIBATI, SOLOMON ISLANDS, TUVALU, FEDERATED STATES OF MICRONESIA and VANUATU. Membership now totals fourteen. While SPEC does have a formal membership, it was not designed to create exclusive benefits for those members alone. It has always been the express wish of the Forum that SPEC should be available to help other Pacific Island territories, and thus promote the interests of the region as a whole.

4.4. Functions

The Agreement establishing SPEC states that the purpose of the Bureau is to facilitate continuing co-operation and consultation between members on trade, economic development, transport, tourism and other related matters.

With this broad mandate the following functions are included:

- to identify opportunities for the modification of trade patterns, bearing in mind the objectives of regional trade expansion;
- to investigate ways in which industrial and other development could be rationalised, using the concept of regional enterprise;
- to look at the scope for free trade among the Island member countries;
- to establish an advisory service on sources of technical assistance, aid and investment finance; and
- to help co-ordinate action on regional transport.
Regional Shipping Transport is an important part of SPEC’s activities. The assignment to SPEC in 1972 of the task of studying the financial and operational structure of a regional shipping line reflected the priority island leaders attached to the concept, and to the linkage between trade and transport in the South Pacific Region. As a result the Regional Shipping Council and its Advisory Board was formed in 1974 and in 1976 the Forum endorsed the formation of the Pacific Forum Line as a regional shipping venture. The documents establishing the line were finalised in 1977.
5. South Pacific Region

5.1. The Pacific Region

The Pacific Region has been defined, for the purpose of the Uniform Maritime Standards Code, and the area bounded by the limits 5 degrees North - 47 degrees South and 100 degrees East - 140 degrees West.

5.2. Historical Influence on Regional Maritime Standards

The majority of the country members of SPEC have at some time in their history been colonies or protectorates of the United Kingdom of Great Britain and have inevitably developed their Maritime Administration and Legislation either directly from the British system or indirectly through association with Australia or New Zealand.

The development of Maritime education in the United Kingdom provided a major determinant in its programmes over the years, and has been the influence of the Regulatory requirements, in particular the statutory examinations for the Certificates of Competency. Until comparatively recently all maritime training programmes were dominated by the statutory examination syllabuses.

The area of the defined Pacific Region which is most commonly used by the fleets of the island nation members of SPEC is that from the East coast of Australia to Cook Islands; New Zealand to the Caroline Islands Group; some 12 million square miles of sparcely populated ocean.

The Western side of the Region contains the larger
islands (Solomons, Papua New Guinea, Vanuatu) with mountainous interior and little road communication. The internal sea trade in this area tends to be of a coastal nature, village to village, with the ships virtually always in sight of land and with sheltered harbours within a few hours steaming. Cargo handling is undertaken by the crew, sometimes in small boats, but wharves are fairly numerous.

The Eastern side of the Region contains mainly groups of low lying coral atolls, scattered over a wide area. While the lagoons are navigable, the entrances are often very shallow. Populations are small. Cargo is almost exclusively handled by the crew in small boats onto an open beach on such islands. The atolls provide shelter only within the lagoon. Once outside the lagoon the ship is immediately exposed to the full effects of what the Pacific Ocean has to offer.

A typical ship required to service the atolls is a 300 GRT ocean going ship of 2000 miles range, 8 knots, maximum draught 3 metres, with officers competent to navigate by astro navigation at all times.

The people in the two parts of the Region are influenced geographically in their Seafaring Knowledge. On the larger, Western Islands where villagers can live off the land, and even be unaware of the existence of the sea, their seafaring experience will be limited. The people of the coral atolls, with minimal agriculture are totally dependent on understanding the sea, and within the present century were still adapt with their traditional methods of ocean navigation.
The national and privately owned fleets of the island nations total approximately 1000 ships, most of which are less than 500 gross tons or one ship per 12,000 square miles of ocean. Traffic routing is hardly a problem, and collision damage is rare. The more common ship casualties are caused by grounding, fire and foundering.

5.3. Maritime Training Facilities in the Pacific Region

The first meeting of the Advisory Committee on Uniform Maritime Standards held in Honiara, Solomon Islands, November 1978, supported the concept of national training centres co-ordinating their training programmes both in terms of syllabuses and in the courses offered, to make the best use of expensive facilities and to avoid unnecessary duplication and overlap. Overall, the effort of the centres should be aimed at providing not only for the national, but also for regional need.

The committee also decided that they would recommend that the acceptance of Uniform Maritime Standards created a favourable climate for rationalising training facilities in the region.

Because of the dispersed nature of the region and the advantages of training students in, or near their own countries, it was accepted that the region could probably support all the existing institutions training in the lower and middle levels. However, because of the cost of training facilities for the higher grades, it was considered that there was scope for rationalisation of the training facilities within the region at these levels.
It was also considered that the existing training facilities should be regarded together as constituting the regional maritime training facilities. If necessary, national institutions should be modified to ensure that the regional training need was fully met.

The maritime training facilities available in the Pacific Region are:

- Fiji: School of Maritime Studies as part of the Fiji Institute of Technology, Suva.

- Papua New Guinea: P.N.G. Nautical Training College, Madang.

- Solomon Island: Marine Training School, as part of Honiara Technical Institute, Honiara.

- Kiribati: Maritime Training School, Betio.

- Tuvalu: Tuvalu Marine School, Amatuku.

- Western Samoa: Marine Training Centre, Apia.

FIG 3 shows the types of courses conducted in these schools.

The UMS Committee again in 1983, recommended the establishment of Regional Training Centres:

- that formal agreement is reached between the governments of Fiji, Papua-New Guinea and Solomon Islands on the one hand, and individual SPEC member countries on
the other hand, that the three first named countries provide training and examining facilities on a regional basis to other countries wishing to participate; that the other countries do not compete by attempting to establish their own regional training or examining facilities, nor issue their own "Regional" named Certificates of Competency outside any agreement with the officially named Regional Examination Centres;

- that training courses for regional students are provided at the three Regional Centres, to an approved Regional Standard; including the appropriate supplementary courses as follow:

- Solomon Island: Grade 5-4 Master
  Grade 4,3 and 2 Engineer
  Marine Engineer Apprentice/cadet leading to Grade 3 Engineer.

- Papua-New Guinea: Grade 5-4 Master
  Grade 5-4 Engineer.

- Fiji: Grade 5-4-3 and 2 Master
  Grade 5-4-3 and 2 Engineer
  Deck cadet leading to Grade 4 Deck officer
  Engineer cadet leading to Grade 3 Engineer.

The above courses have all been revised to the SPUMS Code, however, progress are now in stages of revising the cadet system in Fiji both deck and engineering to suit the Code.
### MARITIME TRAINING FACILITIES AVAILABLE IN THE PACIFIC REGION (1982)

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>COURSES (in U.M.S. equivalence)</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIJI</td>
<td>(1) Pre-Sea Deck and Engineer Cadets.</td>
<td>Caters for all requirements of the Region other than Grade 1 certificates.</td>
</tr>
<tr>
<td>School of Maritime Studies</td>
<td>(2) Seamens Course</td>
<td></td>
</tr>
<tr>
<td>Fiji Institute of Technology</td>
<td>(3) Grade 5 M &amp; E.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4) Grade 4 M &amp; E.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5) Grade 3 M &amp; E.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6) Grade 2 M &amp; E.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7) Full Radar, ENA, Fire, Survival, Lifeboat, medical.</td>
<td></td>
</tr>
<tr>
<td>PAPUA-NEW GUINEA</td>
<td>(1) Pre-sea ratings</td>
<td>Trains to Regional Standards to Grade 4, and is fully occupied with training National Students.</td>
</tr>
<tr>
<td>Nautical Training Institute, Madang.</td>
<td>(2) Seamens Course</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3) Grade 5 M &amp; E.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4) Grade 4 M &amp; E.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5) Limited Radar; Fire, Lifeboat, Survival.</td>
<td></td>
</tr>
<tr>
<td>SOLOMON ISLANDS</td>
<td>(1) Pre-sea ratings</td>
<td>Caters for Regional requirements to Grade 4 M. and Grade 2 E.</td>
</tr>
<tr>
<td>Honiara Technical Institute</td>
<td>(2) Grade 5 M &amp; E.</td>
<td>Could possibly provide academic parts of more senior levels for own nationals only.</td>
</tr>
<tr>
<td></td>
<td>(3) Grade 4 M &amp; E.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4) Grade 3 &amp; 2 E.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5) Engineer Apprentice.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6) Limited Radar, Fire, Survival, ENA.</td>
<td></td>
</tr>
<tr>
<td>KIRIBATI</td>
<td>(1) Pre-sea ratings</td>
<td>Training for overseas employment of ratings. No Regional commitment.</td>
</tr>
<tr>
<td>Tarawa Marine Training School</td>
<td>(2) Able Seamen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3) Motorsman</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4) Fire, Lifeboat, Survival.</td>
<td></td>
</tr>
<tr>
<td>TUVALU</td>
<td>as per Kiribati</td>
<td>as per Kiribati</td>
</tr>
<tr>
<td>Tuvalu Marine School, Amatuku.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WESTERN SAMOA</td>
<td>as per Kiribati</td>
<td>as per Kiribati</td>
</tr>
<tr>
<td>Marine Training Centre, AP1A.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Relationship between existing certificates, planned United Kingdom certificates and proposed Pacific Region certificates

<table>
<thead>
<tr>
<th>Proposed Pacific Region Certificates</th>
<th>Planned U.K. Certificates</th>
<th>Existing FIJI Certificates</th>
<th>Existing PNG Certificates</th>
<th>Existing Solomon Is. Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 1: Master Mariner</td>
<td>Class 1: Master Mariner</td>
<td>Master Mariner</td>
<td>Master Mariner</td>
<td>Master Mariner</td>
</tr>
<tr>
<td>Grade 2: Master (Pacific Region)</td>
<td>2 &quot; &quot; &quot;</td>
<td>Master Pacific</td>
<td>Master Pacific</td>
<td>Master Pacific</td>
</tr>
<tr>
<td>Grade 3: Master (Pacific Region)</td>
<td>3 &quot; &quot; &quot;</td>
<td>Mate Pacific</td>
<td>Mate Pacific</td>
<td>Mate Pacific</td>
</tr>
<tr>
<td>Grade 4: Master (Country *)</td>
<td>4 &quot; &quot; &quot;</td>
<td>2nd Mate Pacific/Master (FIJI)</td>
<td>Master (PNG)</td>
<td>Master (SOL)</td>
</tr>
<tr>
<td>Grade 5: Master (Country *)</td>
<td>5 &quot; &quot; &quot;</td>
<td>Mate (FIJI)</td>
<td>Mate (PNG)</td>
<td>Mate (SOL)</td>
</tr>
<tr>
<td>ENGINE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 1: Marine Engineer</td>
<td>1 Marine Engineer</td>
<td>Marine Engineer</td>
<td>Marine Engineer</td>
<td>Marine Engineer</td>
</tr>
<tr>
<td>Grade 2: Marine Eng. (Pacific Region)</td>
<td>2 Marine Engineer</td>
<td>Class 1 Engineer</td>
<td>Class 2 Engineer</td>
<td>500 UPGRADED</td>
</tr>
<tr>
<td>Grade 3: Marine Eng. (Pacific Region)</td>
<td>3 Marine Engineer</td>
<td>Class 2 Engineer</td>
<td>Class 3 Engineer</td>
<td>300 UPGRADED</td>
</tr>
<tr>
<td>Grade 4: Marine Eng. (Country *)</td>
<td>4 Marine Engineer</td>
<td>Class 3 Engineer</td>
<td>Class 4 Engineer</td>
<td>NO EQUIVALENT</td>
</tr>
<tr>
<td>Grade 5: Marine Engineer (Country *)</td>
<td>5 Marine Engineer</td>
<td>Engine Room Operator</td>
<td>Mech. 1st Class</td>
<td></td>
</tr>
</tbody>
</table>

**FIG. 4** 32m

*This will be replaced by the name of the country issuing the certificate. The wording indicates a local certificate e.g. "Solomon Islands".*
Recently, all three countries have signed a Memorandum of Understanding agreeing to utilise their national training centres as Regional Training Institution. See Appendix 4.

5.4. Regional Examination Centres

The fifth meeting of the Advisory Committee on Uniform Maritime Standards in Betio, Kiribati outlined the need for maintaining the integrity of maritime examining authorities in the Pacific Region.

A Pacific Region Certificate Structure had been established; it was important that standards be maintained and the Certificates be accepted throughout the region and beyond. Control should be exercised by limiting the number of examination centres. This would also be more economical as the provisions of facilities for examination was very costly.

The three centres in the region at present: Fiji, Papua-New Guinea and Solomon Island provided training for Grade 4 level or above. It was then proposed that examination for Pacific Regional Certificate be concentrated in those three countries.

Agreement was reached by the three centres and acceptance was given by other Pacific Island countries to forego the provision at their Maritime Training Centres of examination at Grade 4 level and above. Examinations would still be conducted in the home country where a lower certificate level of competency was required.
The Committee agreed to make recommendation to the Regional Shipping Council:

- to establish a formal agreement with the Maritime Training School and Examination centres in Fiji, Papua-New Guinea and Solomon Islands by which those schools and centres would provide courses and examinations for Certificate of Competency for Grade 4 and above, for other Pacific Island countries.

- to establish formal agreement with other Pacific Island countries wishing to send their candidates to those regional training and examination centres.

The Tenth Regional Shipping Council meeting accepted the UMS Committee’s recommendation for a formal agreement among member countries to establish a regional training and examination system:

Approved Regional Training Institution
-------------------------------------
- School of Maritime Studies - Suva, Fiji.
- PNG Nautical College - Madang, Papua New Guinea.
- Honiara Technical Institute - Solomon Island.

Approved Regional Examination Centres
-------------------------------------
- Marine Department - Ministry of Transport and Works, Fiji
- Marine Division - Department of Transport, Papua New Guinea
- Marine Department - Honiara, Solomon Island.
The Regional Examination Centres undertake to:

1. guarantee examination services being regularly available to suit the timing and level of courses being conducted at Regional Training Centres;

2. maintain adequate staffing by properly qualified staff according to the minimum standards approved by the Advisory Committee on Uniform Maritime Standards;

3. Facilitate secondment of staff to or from other Regional Examination Centres in emergency situations;

4. liaise with other Regional Examination Centres in order to:
   - maintain and upgrade the standards and efficiency of each institution;
   - share the Regional Examination Question Bank and maintain its security; and
   - maintain the integrity of the regional examination system.

5. provide, for an economic fee, examination services at Grade 5 level in countries not possessing examination facilities where sufficient candidates make this economically viable.

The Memorandum of Understanding for Regional Examination Centres is Appendix 4.
6. FIJI MARINE BOARD

The functions of the Marine Department under the Ministry of Transport and Works fall under the following broad headings:

1. Administration, involves supplying a service to the shipping industry in Fiji;

2. Regulatory, involves the survey of ships and enforcing the Marine Act and Subsidy and Regulations;

3. Fleet Operation, involves the provision of shipping services to all parts of the Fiji Group;

4. Ship Building, covers building a wide range of vessels both for Government use and for the private sector;

5. Navigational Aids, involves the provision of lighthouses, beacons and voyage throughout the Fiji group for the aid of navigators.

The emphasis on this Chapter will be on the Regulatory function which comes under the Fiji Marine Board Ordinance.
6.1. Appointment of the Fiji Marine Board
------------------------------------

The Minister may nominate and appoint a President and any number of persons not exceeding four exclusive of the President to be a Board called the "Fiji Marine Board" and three members of such Board shall be a quorum with equal powers as a full Board to carry out the provisions of the Marine Board Ordinance.

6.2. Power of the Board
---------------------

The power, authorities and jurisdiction of the Board shall extend and may be exercised by them in and over any tidal waters of Fiji as defined by proclamation of the 10th day of October 1874 namely between the 15th to 22nd degrees of south latitude and between longitude of 175 degrees east and 175 degrees west.

The overall infrastructure of the Fiji Marine Board administration would naturally depend upon the nature and extent of the duties and responsibilities involve, which in turn would depend upon the current stage of maritime development in the country and its plan for future maritime development, including the pace at which the future development is to proceed.

The technical standards of all ships and marine structures is on global basis invested in the International Maritime Organisation (IMO).

The education of seafarers and co-operation to effect technological transfer is placed on the technical co-operation division of the IMO. The conventions, codes and recommendation emanating from this division can best be
interpreted by the Fiji Marine Board administration. Although we utilise the efforts of this IMO Division, in most cases we do it without active participation. The general failure of projects undertaken in the Pacific Region by this technical division are due to:

1. The "experts" invited to take charge of such projects cannot co-ordinate all interested parties on our behalf.

2. The supporting infrastructure is usually beyond the foreigners capabilities.

3. The necessary preparation for the major project is never there.

4. The lack of trust in some Fijians who might support the successful implementation of the project.

5. The betrayal of trust by some Fijians who are placed in the stream of the project.

6. The selection of competent people to hold important strategic positions vital to the successful implementation of the project.

7. Political and personal interest over and above national objectives.

If the Ministry of Transport and Works were to act in accordance with the statutory provisions with a view to eliminating all the short comings then manpower development and training should not be elusive.
There is a vital need to understand fully:

1. The advantages of maritime development,

2. The various role and functions to be undertaken in connection with maritime affairs,

3. The kinds of professional officials who are required for the purpose.

Accordingly, the primary functions of the Maritime Administration (Marine Department) in Fiji have to be both developmental and regulatory. The developmental functions contribute directly to maritime development and the regulatory functions also contribute to such development and consequentially to economic advantages.

The developmental function can take the form of participation in the process of formulating the policy of the Government as regards maritime development and deciding upon the activities to be undertaken in connection with such development. Such functions are essentially contributory to the overall economic policy decisions to be taken by the Government and may include:

- the appropriate analysis/assessment of the most suitable types and number of ships required to meet the scale of development planned.

- development of the man-power need of the shipping industry.

- development of ship-building and ship-repair capabilities.
- development of marine ancilliary industries.
- development of employment opportunities for national seafarers.

The regulatory functions are expected to ensure:

- maximum efficiency in the operation of ships, with consequential economic advantage

- creation, development, protection and preservation of national maritime skills

- reduction in the maintenance cost for ships

- avoidance of disasters and consequential loss of (or damage to) lives, property, and marine resources with heavy expenditure

- provision of overall impetus to maritime development and

- projection of the image of the country in very favourable light in the maritime world.

The following are the basic problems as regards matters pertaining to the Maritime Administration in Fiji:

1. inadequate awareness of the basic problems themselves

2. non-involvement in the evolution of international standards and the consequential problem of having to deal with them in isolation
3. out-dated Maritime Legislation (both primary and subsidiary)

4. inadequate infrastructure, as regards organisation and personnel, for ensuring:

- proper standards of maritime safety on board ships and prevention of pollution from ships, which cover not only the ships themselves but also the personnel manning them

- maritime development in general, and

- attention to allied maritime matters

5. acute shortages of marine officers with the needed qualification and experience

6. inadequate training facilities for marine officers and seamen

The basic problems have continued to exist because:

1. there has been the need to identify the very problems themselves, and

2. there has been the vital need to provide guidelines, proposals, suggestions and information on the many activities to be attended to in order to overcome the problems and to lead to appropriate maritime administration and development.
Having identified the above basic problems in the Fiji Maritime Administration, the following is proposed in order to overcome the problems and to lead to appropriate maritime administration and consequential maritime development:

1. constitution/statutory position as regards responsibility for Merchant Shipping and ports.

2. status of present maritime legislation of relevance and proposed changes/amendments.

3. present functions and activities of the Maritime Administration

4. total number of officers particularly marine officers in the Maritime Administration (posts filled, posts vacant and location of such officers)

5. qualification and experience stipulated for above posts of marine officers

6. statutory duties performed (or required to be performed) by such marine officers

7. registration of ships—Rules and Procedure

8. system for surveys and inspection of ships

9. number of national ships and their particulars

10. system for issue of appropriate survey and inspection certificates
11. system for maintenance and records/plans of national ships

12. system of training government surveyors

13. procedure/system for examination and issue of Certificate of Competency or licenses to merchant marine officers

14. rules/system for manning national ships

15. particulars of present institutions for training seafaring personnel

16. number of national ships visiting national ports per annum

17. number and categories of national seagoing personnel

18. system for Registration of Seamen

19. any seagoing ship/ships constructed in the country

20. proposals for ratification and implementation of IMO Conventions

21. procedure/system for conducting inquiries/investigations into shipping casualties

22. procedures for detention of unseaworthy ships

23. details of any "Air/sea Search and Rescue System" in existence
24. present system/arrangement for the prevention/contro-
   l/combat of marine pollution

25. arrangements for navigational charts, notices to
    mariners and navigational warnings

26. rules/system for handling dangerous goods in port

27. any course for lifeboatmen, firefighting etc.

6.3 Appointment of Surveyors

The Board may appoint any person to act as a Surveyor to
report to them upon any of the following matters, i.e.
the nature and causes of any accident or damage and any
other matter in relation to the jurisdiction and author-
ity set up by the Marine Board Ordinance.

6.4. Appointment of Examiners

The Board may, with the approval of the Minister appoint
examiners both Deck and Engineer to conduct examinations
and any member of the Board may be present and assist if
required.

6.5 Marine Enquiries

The Board may institute and hold a preliminary inquiry as
to shipwrecks or other casualties affecting ships or as
to charges, incompetency, misconduct on the part of the
masters, mates, or engineer of ships.
The Marine Board is comprised of the following members from 1983:

1. President—shipowner and businessman
2. Vice President—Grade 2 Master—Civil Servant
3. Member—Master Mariner—Businessman
4. Member—Grade 3 Engineer—Businessman
5. Member—Shipping Manager
6. Member—Shipowner
7. Member—Shipowner
8. Secretary—Civil Servant

The purposes of this Chapter is to highlight the inadequacies existing in the overall maritime infrastructure.

While the above method of allocation of Government business and the priorities of the common man have to be accepted as realities, the gross inadequacy is that there is a fallacious belief that there is a "Maritime Administration" since there is a Ministry responsible for maritime matters.

As stated earlier, there is the vital need to understand fully:

- the advantages of maritime development;
- the various roles and functions to be undertaken in connection with maritime affairs;
- the kinds of professional officials who are required for the purpose.
6.6. International Convention

International Conventions which Fiji is a Party to are:

1. Safety of Life at Sea (SOLAS) 1960, 1974

2. Collision regulation (COLREG) 1972

3. Loadline (LL) 1966

4. Tonnage Measurement 1969


6. Intervention 1969

7. Civil Liability 1969

8. Fund 1971

There is also a number of international codes, conventions, and other instrument related indirectly or directly to maritime education. Such instrument are those adopted by ILO, ITU and IMO. It is very difficult to deal in detail with specific requirements of all conventions concerned. Furthermore, it is not intended nor within the purpose of this paper to go into the details of those instruments. Therefore it seems appropriate to deal exclusively with the 1978 STCW Convention which established for the first time on a global basis detailed requirements on the standards of training, certification and watchkeeping for seafarers. Moreover, it is not the aim of this section to discuss all the technical requirements
of the Convention but rather to attempt to touch on some of the associated policy, administrative or organisational implications.

The Convention itself entered into force on the 28th of April 1984. This urges non-parties to the Convention, which have their fleets engaged on international seas, to consider the ratification of the Convention, because it is disadvantageous not to ratify it. The disadvantages of not ratifying the Convention include:

- the difficulties and delays which may be encountered by ships of a State not party when calling at ports of a country that is party to the Convention (Art. X, paragraph 5);

- the certificate of competency issued by a State not party would not be recognised nor probably accepted for service on board ships of States party to the Convention; and

- the training given in maritime educational institutions of a State not party would not be readily accepted as being adequate.

On the other hand, there are some advantages of becoming party to this convention, which include the following consideration:

- technical co-operation and assistance in maritime training would be simplified because of the greater harmony that would exist in certification structures and training syllabuses would include a common core of basic requirements;
- the recognition of training given or certificates issued by an administration to its seafarers would be more easily achieved including the acceptance of such qualification for the purpose of employment in ships of other nationalities;

- conversely an Administration can more easily accept training received abroad by its own seafarers if the country in which the training is received is a party to the Convention; and

- the acceptance and clearance of ships of its parties to the Convention is regulated by the provisions of Article X and Regulation 1/4 of the Convention.

The Convention, in fact, takes account of the differing approaches taken by various countries suited to its need. However, the minimum training requirements must always be met or exceeded whatever system may be adopted. Again the certification structure adopted by a party may vary from that identified in the Convention but any certification structure adopted must be compatible with the provisions of the Convention. Under the Convention an Administration may delegate the functions of conducting the training, examining and issuing certificates. The Administration is, however, responsible for taking all steps necessary to give full and complete effect to the Convention. In this connection, it must specially approve certain items such as sea-going service and special courses and be satisfied that all candidates meet the requirements of the Convention before the certificate is issued on its behalf. In addition, the Administration is required, in accordance with Article VI and Regulation 1/2, to endorse
the certificates issued to Masters and officers, using the standard form indentified in Regulation 1/2. Consequently, an increasing harmony in maritime education can be expected to emerge.
The South Pacific Uniform Maritime Standard Code is intended to cover the requirements of international conventions particularly the STCW Convention 1978 and at the same time provide a realistic standard of operations and manning acceptable to all participating countries in the region which includes Fiji.

The Code is not intended to be a legal document, but is intended to provide a set of minimum technical standards which can be used by the countries of the Pacific Region as a basis for their national maritime legislation. Member Governments are however, quite free to adopt higher standards and more stringent requirements in their national legislation if they so desire.

International Maritime Conventions included in the Code are:


- International Convention on Load Line, 1966 (LL 1966);

- Regulation for Preventing Collisions at Sea, 1972 (COL-REG 1972);

- International Convention on Tonnage Measurement of Ships, 1969. (TONNAGE 1969) and

Fiji is a Party to all the above international conventions except the STCW 1978, therefore, this project is intended to prepare the Fiji School of Maritime Studies to meet and cater to the standards required by the STCW.

The format of the SPUMS Code is:

Chapter 1 Interpretation
  Application of Code
  Classification of Vessels and Areas
  International Maritime Conventions

See Appendix 1

Chapter 2 General requirements of STCW Convention
  Masters and Deck Officers- Manning and Qualifications
  Marine Engineers- Manning and Qualifications
  Radio Officers- Manning and Qualifications
  Ratings- Manning and Qualifications

See Appendix 2 and 3
Chapter 3 Survey and Safety Certificates
- Construction and Stability
- Machinery and Electrical Installations
- Load Line
- Lifesaving Appliances
- Fire fighting Appliances
- Navigational and Miscellaneous Equipment
- Radio
- Carriage of Dangerous Goods and Bulk Cargoes
- Safety of Navigation

Chapter 4 Tonnage Measurement

Chapter 3 and 4 are contained in the volume 2 of the SPUMS Code which are expected to be completed sometimes in November or December 1986.

Because this project is tailored towards Education and Training, I will emphasize the Deck and Engineering departments for officers and Ratings and their training programmes to suit the STCW 78 Convention.

7.2. Deck Certificate and Manning

New Grades of Certificates as per SPUMS Code:

- Grade 1 Master
- Grade 2 Master
- Grade 3 Master
- Grade 4 Master
- Grade 5 Master
The following tables indicate the minimum grade of certificate required for the respective positions on ships to which the Code applies for ships engaged in the relevant operations.

### Unlimited Trade

<table>
<thead>
<tr>
<th>Tonnage (length)</th>
<th>Master</th>
<th>Chief Mate</th>
<th>2nd Mate</th>
<th>3rd Mate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 GT and over</td>
<td>Grade 1</td>
<td>Grade 1</td>
<td>Grade 3</td>
<td>Grade 3</td>
</tr>
<tr>
<td>(80m length and</td>
<td>Master</td>
<td>Mate</td>
<td>Mate</td>
<td>Mate</td>
</tr>
<tr>
<td>over)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1600 GT (less than</td>
<td>Grade 2</td>
<td>Grade 2</td>
<td>Grade 3</td>
<td>Grade 4*</td>
</tr>
<tr>
<td>80m length)</td>
<td>Master</td>
<td>Mate</td>
<td>Mate</td>
<td>Mate</td>
</tr>
</tbody>
</table>

### Pacific Region Trade

<table>
<thead>
<tr>
<th>Tonnage (length)</th>
<th>Master</th>
<th>Chief Mate</th>
<th>2nd Mate</th>
<th>3rd Mate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1600 GT and over</td>
<td>Grade 2</td>
<td>Grade 2</td>
<td>Grade 3*</td>
<td>Grade 4*</td>
</tr>
<tr>
<td>(80m length and</td>
<td>Master</td>
<td>Mate</td>
<td>Mate</td>
<td>Mate</td>
</tr>
<tr>
<td>over)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tonnage (Length)</td>
<td>Master</td>
<td>Chief Mate</td>
<td>2nd Mate</td>
<td>3rd Mate</td>
</tr>
<tr>
<td>------------------</td>
<td>--------</td>
<td>------------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>Less than 1600 GT (less than 80 m length)</td>
<td>Grade 3</td>
<td>Grade 3</td>
<td>Grade 4</td>
<td></td>
</tr>
<tr>
<td>1600 GT and over (80 m length and over)</td>
<td>Grade 2</td>
<td>Grade 2</td>
<td>Grade 4</td>
<td></td>
</tr>
<tr>
<td>1000 GT-1600 GT (60 m-80 m length)</td>
<td>Grade 3</td>
<td>Grade 3</td>
<td>Grade 4</td>
<td></td>
</tr>
<tr>
<td>200 GT-1000 GT (35 m-60 m length)</td>
<td>Grade 4</td>
<td>Grade 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 200 GT (less than 35 m length)</td>
<td>Grade 5</td>
<td>Grade 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: An Authority may, if it considers the ship's size and conditions of its voyage are as to render the application of this requirement unreasonable or impracticable, exempt the ship from this requirement.
<table>
<thead>
<tr>
<th>Certificate</th>
<th>Trade area</th>
<th>Capacity</th>
<th>Size of Ships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>All trades</td>
<td>Master</td>
<td>All tonnages</td>
</tr>
<tr>
<td>Master</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 2</td>
<td>Unlimited</td>
<td>Master</td>
<td>Less than 1600GT</td>
</tr>
<tr>
<td>Master</td>
<td>Pacific</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Region</td>
<td>Master</td>
<td>All tonnages</td>
</tr>
<tr>
<td></td>
<td>Near Coastal</td>
<td>Master</td>
<td>All tonnages</td>
</tr>
<tr>
<td>Grade 3</td>
<td>Pacific</td>
<td>Master</td>
<td>Less than 1600GT</td>
</tr>
<tr>
<td>Master</td>
<td>Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Near Coastal</td>
<td>Master</td>
<td>Less than 1600GT</td>
</tr>
<tr>
<td>Grade 4</td>
<td>Near Coastal</td>
<td>Master</td>
<td>Less than 1600GT</td>
</tr>
<tr>
<td>Master</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 5</td>
<td>Near Coastal</td>
<td>Master</td>
<td>Less than 200GT</td>
</tr>
<tr>
<td>Master</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Certificate</th>
<th>Trade areas</th>
<th>Capacity</th>
<th>Size of Ships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>All trades</td>
<td>Chief Mate</td>
<td>All tonnages</td>
</tr>
<tr>
<td>Mate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 2</td>
<td>Unlimited</td>
<td>Chief Mate</td>
<td>Less than 1600GT</td>
</tr>
<tr>
<td>Mate</td>
<td>Pacific</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

55
<table>
<thead>
<tr>
<th>Grade</th>
<th>Mate</th>
<th>Region</th>
<th>Tonnage</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Mate</td>
<td>Unlimited  Pacific</td>
<td>All tonnages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Mate</td>
<td>All tonnages</td>
</tr>
<tr>
<td>4</td>
<td>Mate</td>
<td>Pacific</td>
<td>All tonnages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3rd Mate</td>
<td>All tonnages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Mate</td>
<td>Less than 1600GT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd Mate</td>
<td>All tonnages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chief Mate</td>
<td>Less than 1600GT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Near Coastal Chief Mate</td>
<td>Less than 1600GT</td>
</tr>
<tr>
<td>5</td>
<td>Mate</td>
<td>Near Coastal</td>
<td>Less than 200GT</td>
</tr>
</tbody>
</table>

**Note:** Gross tonnage/length equivalent
- 1600 gross tonnage equivalent length 80 metres
- 1000 gross tonnage equivalent length 60 metres
- 200 gross tonnage equivalent length 35 metres

**Masters Certificate:** Holders of Masters Certificate are entitled to serve as Master of any grade below that of the certificate held or as Mate at the same or lower level.

**Mate’s Certificate:** Holders of Mate’s Certificates are entitled to serve as Mate of any grade below that of the certificate held.
DECK COURSE STRUCTURE

PROPOSED:

<table>
<thead>
<tr>
<th>GRADE</th>
<th>DESCRIPTION</th>
<th>MONTHS</th>
<th>SYMBOL</th>
</tr>
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<tbody>
<tr>
<td>G5</td>
<td>MASTER</td>
<td>12</td>
<td>S.S</td>
</tr>
<tr>
<td>G4</td>
<td>MASTER</td>
<td>24</td>
<td>S.S</td>
</tr>
<tr>
<td>G3</td>
<td>MASTER</td>
<td>24</td>
<td>S.S</td>
</tr>
<tr>
<td>G2</td>
<td>MASTER</td>
<td>12</td>
<td>S.S</td>
</tr>
<tr>
<td>G1</td>
<td>MASTER</td>
<td>12</td>
<td>S.S</td>
</tr>
<tr>
<td>G5</td>
<td>MATE</td>
<td>24</td>
<td>S.S</td>
</tr>
<tr>
<td>G4</td>
<td>MATE</td>
<td>18</td>
<td>S.S</td>
</tr>
<tr>
<td>G3</td>
<td>MATE</td>
<td>36</td>
<td>S.S</td>
</tr>
<tr>
<td>DA5</td>
<td></td>
<td>12</td>
<td>S.S</td>
</tr>
<tr>
<td>DA3</td>
<td></td>
<td>12</td>
<td>S.S</td>
</tr>
<tr>
<td>DA1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE:

S.S ...... Sea Service

DA1 ..... First Year Deck

G5 ...... Grade 5 Master

Apprentice
Holders of Grade 1 or Grade 2 Mate’s certificate are entitled to serve as Grade 5 Master.

7.3. Deck Syllabuses

Grade 1 Master:

Business and Law
Navigation
Ship Construction and Stability
Engineering and Control System
Navigational Aids and Instrument
Meteorology, Current and Routeing
Electro Technology
Oral and Practical
Signals

Supplementary Short Courses:

First Aid
Restricted Radiotelephony
Survival (Fiji)
Fire fighting
Radar Observer (Fiji)
Electronic Navigational Aids (Operation)
Radar Simulator
Ships Master Medical

Grade 2 Master:

Navigation and Chartwork
Meteorology, Current and Routeing
Ship Construction and Stability
Electro technology
Compasses and Navigational Aids
Ship Masters Business
Oral and Practical
Signals

Supplementary Short Courses:
-------------------------

First Aid
Restricted Radiotelephony
Survival (Full)
Firefighting
Radar Observer (Fiji)
Electronic Navigational Aids (Operation)
Radar Simulator
Ships Master Medical

Grade 3 Master:
--------------

Navigation
Chartwork and Pilotage
Ships Construction and Stability
Ship Operation
Meteorology
Principle of Navigation
Oral and Practical
Signals

Supplementary Short Courses:
-------------------------

First Aid
Restricted Radiotelephony
Survival (Full)
Firefighting
Radar Observer (Full)
Electronic Navigation Aids (Operation)

Grade 4 Master:
---------------------

General Ship Knowledge
Chartwork and Pilotage
Practical Navigation
Meteorology
Oral and Practical
Signals

Supplementary Short Courses:
-----------------------------

First Aid
Restricted Radiotelephony
Survival (Full)
Firefighting
Radar Observer (Limited)

Grade 5 Master:
-------------

Chartwork and Practical Navigation
General Ship Knowledge
Oral and Practical
Meteorology (oral)

Supplementary Short Courses:
-----------------------------

First Aid
Restricted Radiotelephony
Survival (Limited)
Firefighting
Radar Observer (Limited)

Other details on requirements of sea service, examination, marking and assessment are shown on Appendix 2.

7.4. Engineer Certificate and Manning

New Grades of Certificates as per SPUMS Code:

Grade 1 Engineer
Grade 2 Engineer
Grade 3 Engineer
Grade 4 Engineer
Grade 5 Engineer

The following tables indicate the minimum grade of certificate required for the respective positions on ships to which the Code applies, for ships engaged in the relevant operations:

Unlimited Trade

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>300KW and Over</td>
<td>1</td>
<td>2</td>
<td>3*</td>
</tr>
<tr>
<td>750 - 3000KW</td>
<td>2</td>
<td>3</td>
<td>3*</td>
</tr>
<tr>
<td>Under 750KW</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

* Numbers of Watchkeepers (i.e. engineers in charge of a
watch in a traditionally manned engine room or designated as duty engineer in a periodically unmanned engine room) shall be determined by individual Authorities. Due regard shall be had to Regulation III/1 of the STCW 78 Convention.

Pacific Region Trade

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>300KW and over</td>
<td>1</td>
<td>2</td>
<td>3*</td>
</tr>
<tr>
<td>750-3000KW</td>
<td>2</td>
<td>3</td>
<td>3*</td>
</tr>
<tr>
<td>400-750KW</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>200-400KW</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Under 200KW</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* As for unlimited trade.

Near Coastal Trade

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3000KW and over</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>750-3000KW</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>400-750KW</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>200-400KW</td>
<td>4</td>
<td>5*</td>
<td></td>
</tr>
<tr>
<td>Under 200KW</td>
<td>5*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
*Where the size of vessel and type of operation justify it, Authorities may accept a suitably experienced person in lieu.

Table below indicates the functions of each grade of certificate.

<table>
<thead>
<tr>
<th>Certificate</th>
<th>Trade Area</th>
<th>Capacity</th>
<th>Propulsion Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1</td>
<td>All Trades</td>
<td>Chief Eng.</td>
<td>Any Power*</td>
</tr>
<tr>
<td>Grade 2</td>
<td>All Trades</td>
<td>Second Eng.</td>
<td>Any Power*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chief Eng.</td>
<td>Under 300 KW*</td>
</tr>
<tr>
<td>Grade 3</td>
<td>All Trades</td>
<td>Watchkeeper</td>
<td>Any Power*</td>
</tr>
<tr>
<td></td>
<td>Pacific Region</td>
<td>Second Eng.</td>
<td>Under 3000KW*</td>
</tr>
<tr>
<td>Grade 4</td>
<td>All Trades</td>
<td>Watchkeeper</td>
<td>Under 750KW</td>
</tr>
<tr>
<td></td>
<td>Pacific Region</td>
<td>Second Eng.</td>
<td>Under 750KW</td>
</tr>
<tr>
<td></td>
<td>Near Coastal</td>
<td>Watchkeeper</td>
<td>Under 3000KW*</td>
</tr>
<tr>
<td></td>
<td>Chief Eng.</td>
<td>Under 400KW</td>
<td></td>
</tr>
<tr>
<td>Grade 5</td>
<td>Pacific Region</td>
<td>Second Eng.</td>
<td>Under 750KW</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chief Eng.</td>
<td>Under 200KW</td>
</tr>
</tbody>
</table>

*Requirements comply with relevant provisions of STCW 78 Conventions

Other requirements for certificates, examinations, revalidation etc. are shown on Appendix 2.
NOTE:

GSE ...Grade 5 Engineer
EC 1 ... Engineer Cadet
First Year
S.S ... Sea Service

G1E

12 Months S.S

G2E

12 Months S.S

EC 5

7 Months S.S

G3E

G4E

12 Months S.S

EC 3

8 Months S.S

12 Months S.S

EC 1

3 Months S.S

12 Months S.S

G5E

36 Months S.S

5 YEARS

APP.

FITTER & TURNER

MOTORMAN
7.5. Engineer Syllabuses

Grade 1 Engineer

Examination subjects to be passed are:

Part A - Applied Mechanics
- Heat Engines

Part B - Electrotechnology
- Naval Architecture and Ship Construction
- Engineering Knowledge-General
- Engineering Knowledge-Motor as applicable
- Engineering Knowledge-Steam as applicable
- Engineering Knowledge, Oral.

Supplementary Short Courses:

First Aid
Firefighting
Survival (Full)

Grade 2 Engineer

Examination subjects to be passed are:

Part A - Applied Mechanics
- Applied Heat

Part B - Electrotechnology
- Naval Architecture and Ship Construction
Engineering Knowledge, Motor as applicable
- Engineering Knowledge, Steam as applicable

Engineering Knowledge - Oral

Supplementary Short Courses:
---------------------------
First Aid
Firefighting
Survival (Full)

Grade 3 Engineer
-------------

Examination subjects to be passed are:

Part A - Applied Mechanics
- Heat and Heat Engines
- Engineering Drawing

Part B - Electrotechnology
- Naval Architecture and Ship Construction
- Engineering Knowledge Motor as applicable
- Engineering Knowledge Steam as applicable

- Engineering Knowledge - Oral.

Supplementary Short Courses:
---------------------------
First Aid
Firefighting
Survival (Full)

Grade 4 Engineer
-------------

64
Examination subjects to be passed are:

Part A - Applied Mechanics
- Heat and Heat Engines
- Engineering Drawing

Part B - Electrotechnology
- Naval Architecture
- Engineering Knowledge, General
- Engineering Knowledge, Motor
- Engineering Knowledge, Oral

Supplementary Short Courses:
--------------------------

First Aid
Firefighting
Survival (Limited)

Grade 5 Engineer
-------------

Examination subjects to be passed are:

Part A - Practical Mathematics

Part B - Engineering Knowledge, Written
- Engineering Knowledge, Practical and Oral

Supplementary Short Courses:
--------------------------

First Aid
Firefighting
Survival (Limited)
8. EDUCATION AND TRAINING
-------------------

8.1. Shipping And Its Technology
-----------------------------

The shipping industry has undergone drastic changes in the last three decades. Specialised ships designed to carry containers and vehicles, gas and chemical tankers, drilling and supply vessels etc, have taken the place of the traditional carrier.

Management and manning of ships has become varied and international. The prolonged depression has forced shipowners to enforce stringent economics on ships, often at the cost of safety. Lack of financial resources sometimes leads to inadequate maintenance and intervals between dry-docking are lengthened.

Whatever be the economic scenario as of today, we must face the fact that modern ships are highly complex and require highly trained personnel to operate them economically and safely. It has therefore become essential that the present and past methods of selection and training of maritime personnel be given careful and critical appraisal to evolve a pattern of training and education which is compatible with the requirements of the shipping industry of not only today but also of the ships of tomorrow.

8.2. Manpower Needs In The Maritime Industries
-----------------------------

One of the natural resources of any country is its manpower and this, like any other of its resources, can be neglected or can be actively developed towards its full potential for the economic growth of the country.
In this modern age the full, or at least the reasonably efficient, use of available manpower depends largely upon the existence of adequate numbers of workers possessing the requisite knowledge and skills at various levels in each sector of the economy. The rapid technological development which is characteristic of the age requires a government policy of encouragement or control towards the achievement and correct distribution of such knowledge and skills.

Seafaring has, like many other occupations, been a "learn-as-you-work" activity for thousands of years during which new recruits went to sea and, by a combination of direct experience and of tuition from more senior colleagues, learned the business of seamanship.

Promotion to higher ranks—and eventually to shipmaster in some cases—resulted from this somewhat haphazard combination of experience and knowledge gained over a very long period of time. This training may have been effective enough for its intended purpose but cannot, in the light of modern knowledge on training methods, be regarded as very efficient.

The advent of steam propulsion of ships required seafarers of a new type with operation and repair skills covering engines and boilers. The training of engineer officers also consisted of "learning-on-the-job" by experience and haphazard tuition. However, most of his professional skills were usually acquired ashore, in an engine-building works or ship repair yard before going to sea.
As merchant ships have become more complex and variable the old methods of training have tended to be superseded by newer ones in many countries. These newer methods involve training of a more formal kind, carried out in well organised establishments ashore.

The following list will suffice to give some insight into the general manpower needs of the industry:

1. Government and commercial shipyards and ship repair firms employing management, administrative, technical, supervisory and operative staffs.

2. Government and commercial merchant shipping fleets require deck and engineer officers.

3. Government and commercial fishing fleets require deck and engineer officers.

4. Fiji Ports Authority requires marine officers for its maritime activities.

5. Fiji Naval Division requires officers and petty officers.

6. Fiji Tourist Industry requires deck and engineering officers and to include general purpose crews.

7. Other overseas shipping companies that employ Fiji seamen as officers and crews.

The need of maritime trained personnel is not exhausted by the list above. It is aimed at giving a definite indication of the situation in the country.
8.3. Need For Education and Training

The ultimate aim of any pattern of education and training is, and should be, to produce well qualified seagoing personnel who have followed a well planned programme of training leading to the issue of appropriate certificates of Competency in their respective fields.

Major changes in the principle of education and training of ships officers, were founded upon two basic concepts:

1. That any basic education provided by the industry should be such as to ensure that the trainee was capable of attaining nationally recognized educational qualification to the vocational training needed to enable him to obtain the statutory qualification as a ships officer.

2. That the training should be at least to the standard of a technician:

"One who has acquired detailed knowledge and skills in one specialist field or knowledge and skill to a lesser degree in more than one specialist field; is required to exercise judgement in the sense of both diagnosis and appraisal, and initiative in his work; is frequently called upon to supervise the work of others; and has an appreciation of the environment beyond the immediate limits of his duties".
One of the major steps towards implementation of any training scheme in a country is to examine the legislative provision or ordinances and judge whether it is adequately fashioned along the lines of legally acceptable national standards.

The education of Maritime personnel, like other types of education, is the building in the minds of people the broader understanding of the trade in which they are involved. It will afford individual self-reliance and promote national economic advantages in the trade on a national and world basis. Although it is accepted in principle that training is necessary, no apparent effort is foreseeable unless changes are made in the current process of training.

Fiji should therefore, seriously consider in light of the above concept how it will go about improving the standards needed for its merchant fleets.

Fiji's merchant fleets consist of 208 ships of which 198 are between 30-500 tons and 10 are between 500-10,000 tons and trading locally, Pacific Region and internationally. Another 15 larger vessels of 10,000 tons and above are foreign-owned and trading internationally and all these vessels employs Fiji citizens both officers and crews except for the master and chief engineer who are non-Fiji national.

Bulk of these local seafarers, either, have very little or no-formal education background. Some are self taught and certificated to standards laid down by the Fiji Marine Board Ordinance.
This Ordinance is outdated and does not comply with the standards required by the SPUMS Code.

**Fiji Registered Ships:**

<table>
<thead>
<tr>
<th>No of Ships</th>
<th>Tonnages</th>
<th>Trade</th>
<th>Registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>198</td>
<td>30-500</td>
<td>Locally</td>
<td>Fiji</td>
</tr>
<tr>
<td>10</td>
<td>500-10,000</td>
<td>Local,</td>
<td>Fiji</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pacific</td>
<td></td>
</tr>
<tr>
<td>208</td>
<td></td>
<td>and Inter-</td>
<td>national</td>
</tr>
</tbody>
</table>

**Other Registered Ships**

| 15          | 10,000      | International | Others |

The consequences of employing local seafarers with low qualifications has resulted in the increase of Marine Board Enquiries on casualties and grounding. Recent figures supplied by the Shipping Office show a sharp increase since 1979.

<table>
<thead>
<tr>
<th>Year</th>
<th>No of Enquiries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>10</td>
</tr>
<tr>
<td>1980</td>
<td>6</td>
</tr>
<tr>
<td>1981</td>
<td>8</td>
</tr>
<tr>
<td>1982</td>
<td>14</td>
</tr>
<tr>
<td>1983</td>
<td>19</td>
</tr>
<tr>
<td>1984</td>
<td>21</td>
</tr>
</tbody>
</table>

**Total= 78**
Statistics of examination results also provided by the shipping officer indicate high failure rate of students both deck and engineering who sat and failed in the exams in their first attempts.

### Deck Section

<table>
<thead>
<tr>
<th>Year</th>
<th>Sat</th>
<th>Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>1980</td>
<td>65</td>
<td>17</td>
</tr>
<tr>
<td>1981</td>
<td>58</td>
<td>21</td>
</tr>
<tr>
<td>1982</td>
<td>48</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>181</td>
<td>67</td>
</tr>
</tbody>
</table>

Percentage pass at first attempt = 37%

### Engineering Section

<table>
<thead>
<tr>
<th>Year</th>
<th>Sat</th>
<th>Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>23</td>
<td>9</td>
</tr>
<tr>
<td>1980</td>
<td>45</td>
<td>20</td>
</tr>
<tr>
<td>1981</td>
<td>37</td>
<td>17</td>
</tr>
<tr>
<td>1982</td>
<td>30</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>135</td>
<td>58</td>
</tr>
</tbody>
</table>

Percentage pass at first attempt = 43%
It is not intended to expand or elaborate in this chapter on the high failure rate since the problems are many and varied. However, the intension is to show the urgent need for a proper and well established education and training system.
TABLE 6

FIJI MARINE BOARD EXAMINATION RESULTS

FIRST ATTEMPT (1979......1982)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DECK SECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>79</td>
<td>73F</td>
</tr>
<tr>
<td>80</td>
<td></td>
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<tr>
<td>81</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td></td>
</tr>
<tr>
<td>83</td>
<td></td>
</tr>
<tr>
<td>84</td>
<td></td>
</tr>
</tbody>
</table>

NUMBER OF STUDENTS

- Number of Students sat.
- Number of Students passed.
TABLE 7

FIJI MARINE BOARD EXAMINATION: RESULTS

FIRST ATTEMPT (1979........1982)

Number of Students

Year


Number of Students

passed.

Number of Students

sat.
9.0 SCHOOL OF MARITIME STUDIES.

9.1 Background.

One of the main recommendations in Peter Dudley's Report was that a school of maritime studies be established in Fiji to provide the regional centre for training all grades of sea-going personnel. Priority was to be given to up-grading courses for serving deck and engine room officers. The upgrading courses in both disciplines are already exist at the Fiji Institute of Technology, School of Maritime Studies.

There has been considerable development in the maritime industry in that the condition of services have either improved or are in the process of being improved. Ships are either better equipped or will be better equipped and Marine Legislation is being revised and brought up to international standards. Syllabuses and regulations of Marine Board Examinations are also in the process of being revised and up-graded to the SPUMS Code requirements and standards. There is therefore, a demand for up-grading the present School of Maritime Studies to meet the Code for training. Otherwise the officers and seaman will be left neglected at lower level of standards. The demand from local, pacific region and international shipping including the fishing industry is for trained sea-going personnel both officers and ratings.

The survey carried out by the Regional Coordinator both former and latter under the auspices of SPEC show that there is immediate need for the upgrading of training at the school and of all personnel at present employed.
the shipping industry. This will greatly improve the quality of service now given by these industries. This objective can only be achieved when the extension of the school and the development of its marine engineering section is completed.

There is no pre-sea training available at present. There is only the cadet/apprenticeship scheme both deck and engineering. At the school of maritime studies, limited facilities are available for up-grading seagoing personnel to achieve higher ranks in the various department both ashore and afloat. The proposed syllabuses for future training are shown in chapter 7 and it is intended that the qualification awarded is of the STCW 78 Convention standard and will be internationally recognized once Fiji has acceded to this Convention.

At present most of the teaching staff are recruited from abroad on contract basis and internationally recognized qualifications are demanded from them. The examinations and other means of assessing proficiency of local and regional officers are at present set by the Fiji Marine Board Ordinance.

Courses in the school at present do not include any subjects like Ship Management, Transport Economics, Maritime Law and Personal Management. There is no provision for refresher courses and/or familiarization with updated modern ship operational requirements.

The two main institutions, the Fiji Institute of Technology and the University of the South Pacific do not at present run Diploma or Degree level courses in this
field. The shipping industries do not provide any training facilities for officers although they may be interested to co-operate with the Fiji Institute of Technology, School of Maritime Studies in providing the practical training.

At present there are no facilities for the pre-sea training of ratings both deck and engineering department or for general purpose crews. The survey carried out by the school also showed that there is an immediate need for such training particularly when it is now required by the STCW 78 Convention. Priority should therefore be given not only for officers upgrading but also for ratings who are already employed. It is hoped that the private shipping industries will co-operate in providing "on-the-job" training facilities for officers and also for ratings seeking up-grading to officer status.

There is no institution in Fiji that provide training courses in Business Management with particular emphasis on Transportation Management and Shipping Economics, or for International Maritime Law and Economics at any level. Training in these fields is necessary due to the type of shipping business and expected expansion in the future.

There was no evidence that the employees at various levels in ship management companies are required to have any pre-employment training or in-service courses provided for selected employment. The University graduates are not at present recruited for junior or middle level executive positions directly. With the facilities expanded at the school, it may be possible to provide this kind of training.
9.2 Aims and Objectives of the School.

1. To provide the facilities and instructions for fundamental and theoretical studies and practical training in maritime and related subjects.

2. To continuously assess the school curriculum so as to maintain a relevant link with the manpower situation and the needs of the industry.

3. To continue to offer and improve the range and scope of maritime existing courses with due emphasis on Diploma and trade level programmes.

4. To provide the trainee officer entrants with systematic training combining theoretical knowledge with applied technology and practical experience, incorporating:
   - The fundamental knowledge requirements for the relevant certificate of competency;
   - Practical experience in the use of modern equipment and instrument;

5. To provide education and suitable training for school leavers employed as cadets in the South Pacific Merchant marine who aspire to follow a maritime career as engineer or deck officers;

6. To assist practicing engineers and deck officers to further their maritime career by offering suitable education and training in preparation for examina-
tion offered by the Fiji Marine Board, in accordance with the SPUMS Code.

7. To introduce and train personnel, other than sea going staff in the areas of naval architecture and boatbuilding to advance trade level.

9.3 Building and Facilities.

Maritime education and training units (school, institution, colleges, etc.) consist of a number of closely inter-related elements, each of which has an important function in ensuring that education and training objectives are achieved. These elements are:

1. Experienced and competent teaching, the teaching staff will have the prime responsibility of formulating the education and training programmes, and putting them into effect.

   It is crucial that the staff have the knowledge and experience of the responsibility and functions of ships officers, in order that correct advice and guidance can be given to students.

   It is also vital that the teaching staff are aware, not only of national educational and training requirements, but also those that have been agreed and accepted internationally.
2. Laboratories and practical training facilities of education and training programme will require effective support from laboratories and practical training units, and these facilities need to be compatible with the high and advance technology used in ship and marine operation. The technical staff who maintain and operate these facilities must be highly skilled in their field of special activity, and be able to provide an effective support to the teaching staff.

3. Training equipment must be relevant to the machinery and systems used in modern merchant vessels in order that the practical training activities can be correlated to the duties and functions aboard ship.

4. Mandatory requirements under international conventions provide that every prospective seafarer should, before being employed in a sea-going vessel, receive approved training in Personal Survival Techniques, firefighting and first aid.

It is necessary that adequate and approved provisions are made for training and certification for these mandatory courses. They may not be part of the institution, but such facilities must be identified and provide such instruction that is acceptable to the Maritime Safety Administration.

In a high technology industry, training requirements are constantly under revision.
The IMO Regional Training Project recommended minimum standards of staffing and facilities for Pacific region certificate courses in 1982, based on the principle that, in order for such courses to be recognized for purposes of remission of sea service, the training staff and equipment must meet certain minimum criteria.

Therefore, the School of Maritime Studies is accommodated in a purpose built complex ideally situated at the waterfront at Laucala Bay in Suva. It is comprised of an academic block, an administration block, a boatshed, workshops, a jetty and a boat ramp.

The academic block contains the following facilities:

**Ground Floor:**
- Seamanship room
- Library
- Naval architecture room

**First Floor:**
- Three classrooms
- One private study room

**Second Floor:**
- Chartroom
- Electronic laboratory
- Compass room
- Senior students lecture room

**Third Floor:**
- Bridge (containing Radar, gyro and magnetic compasses, and a wide range of electronic navigational aids).

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The Administration building accommodates the following:

- Head of school office
- Two offices for senior lecturers
- Administration office
- Two offices for lecturers and assistant lecturers
- Audio-visual aid room
- General office and reception
- Canteen
- Toilets.

The Boatshed accommodates:

- An office for Technicians
- Tool store
- General store
- Fuel store
- Bosuns store
- Paint store
- Workshop

Adjacent to the boatshed, there is a temporary building remaining from the previous occupancy which is currently used to accommodate various machinery units, a diesel engine, lathes and machine tools for engineering instructions.

The existing buildings and facilities including training equipment, however, do not meet the requirements of the SPUMS Code.
Considering these important elements, the school has prepared a five year development plan to up-grade and expand the existing nautical training facilities and also to develop a marine engineering training facility for both officers and ratings to meet the SPUMS Code/STCW 78 Convention requirements.

9.4 Courses

The programme of education and training maritime officers must be sufficiently broad based at the basic level to cover all the required knowledge, i.e., a large number of subjects and discipline be involved in its structure.

At more advance levels, where the officer is transferring from junior to more senior ranks and above, the programme will have fewer subjects and will be concentrated into those specialist areas reflecting the higher technology and responsibilities that are associated with senior rank aboard ship and/or senior posts ashore.

In general the programme of education and training must be structured and organized so that knowledge, understanding, skill and experience is steadily and progressively acquired.

Monitoring and assessment procedures will form an important element in the programme in order to ensure that at each stage the specified objectives are being achieved. Continuous assessment procedures with syllabuses written in learning objectives format are now well
established within the educational system and are effective methods of ensuring that educational and training objectives are met.

The sea training phase, though not fully structured in Fiji should in particular be seen as an extension of the activities of the shore based training centre. Monitoring and assessment procedures should be maintained by the ships senior officers.

Knowledge, understanding, skill and experience are the principal components which together provide competence.

Assessment and examination procedures should be concerned with these principal components in order that marine officers, at the end of their education and training, are competent to take charge of the ship’s watchkeeping duties and be responsible for its safe and efficient operation and maintenance with the minimum effect on the environment.

The programme of education and training has to be properly balanced in terms of the distribution of hours to the various subjects and activities, and provision should be made for activities such as tutoring/counselling, private study, recreation/sports, free study time etc.

The basic level course is important as it must provide a firm foundation on which more advanced and specialized studies can be built. The basic level programme should aim at graduating a junior officer competent to be in charge of the bridge and engine room watches.
Service experience in a watchkeeping capacity is required before more senior certificates of competency can be obtained. Therefore, after graduation as a junior watchkeeping officer, watchkeeping service of a prescribed length indicated by the SPUMS Code/STCW 78 Convention is required before further advanced level studies are undertaken, followed by examination and certification to senior rank.

It is necessary, when formulating a programme of maritime studies for seafarers, to ensure that, in addition to satisfying national requirements, it also meets the international standards now accepted by all shipowning and ship operating countries who give priority to ship safety and the prevention of pollution.

There are three important IMO Conventions which need to be considered when formulating training programmes:

- Safety of Life at Sea (SOLAS 1974 and its 1978 Protocol);
- Prevention of Pollution (MARPOL 73/78);
- Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 1978;

Of which the STCW 1978 has the greatest significance when formulating the content of education and training courses or programmes for seafarers.
The STCW 1978 Convention was adopted by the IMO Assembly after a special conference held in 1978. This Convention entered into force when the conditions relating to entry had been satisfied, viz, 25 countries representing 50% of the world’s tonnage had accepted it.

The following are courses conducted by the school designed for the preparation of a candidate for an examination set by the Fiji Marine Board leading to a certificate of competency of the appropriate grade. At the time of writing this project the certificate structure is undergoing adaption to the SPUMS Code standards. Existing and equivalent proposed certificates are shown before the revision of SPUMS to suit STCW.

<table>
<thead>
<tr>
<th>SPUMS PROPOSAL BEFORE REVISION</th>
<th>FIJI ORDINANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1 Master</td>
<td>No equivalent</td>
</tr>
<tr>
<td>Grade 2 Master</td>
<td>Master Pacific Island</td>
</tr>
<tr>
<td>Grade 3 Master</td>
<td>Mate Pacific Island</td>
</tr>
<tr>
<td>Grade 4 Master</td>
<td>2nd Mate Pacific Island</td>
</tr>
<tr>
<td>Grade 4 Master (Restricted)</td>
<td>Master Fiji</td>
</tr>
<tr>
<td>Grade 5 Master</td>
<td>Mate Fiji/Master 50 Ton</td>
</tr>
<tr>
<td>Grade 1 Engineer</td>
<td>No equivalent</td>
</tr>
<tr>
<td>Grade 2 Engineer</td>
<td>1st Class Engineer</td>
</tr>
<tr>
<td>Grade 3 Engineer</td>
<td>2nd Class Engineer</td>
</tr>
<tr>
<td>Grade 4 Engineer</td>
<td>3rd Class Engineer</td>
</tr>
<tr>
<td>Grade 5 Engineer</td>
<td>Engine Room Operator</td>
</tr>
</tbody>
</table>
The cadet/apprenticeship courses both deck and engineer run under the auspices of the Fiji National Training Council and the Fiji Marine Board. They consist of "on-the-job" training and full time courses at the school. Both leading to a craft apprentice or course completion certificate. Duration of the deck scheme is three years, it takes four years for the engineering cadet.

The Fiji Marine Board requirement for cadet/apprentices, prior to sitting for the Grade 4 Master and Grade 3 Engineer Certificate of Competency, are as follows:

1. Deck apprentice or Cadet. To have served in that capacity for a minimum period of 3 years. To follow an approved training schedule consisting of training aboard ship and training in an approved nautical training establishment. The minimum sea service required for the completion of an apprenticeship or cadetship is 24 months.
2. Marine Engineering Apprenticeship or Cadet. To have served in that capacity for a minimum period of 4 years. To follow an approved training schedule consisting of training aboard vessels and training in an approved nautical or mechanical training establishment and to have workshop experience. The minimum sea service required for the completion of an apprenticeship or cadetship is 30 months.

At least 15 months of this must be actual sea time while 15 months may be allowed sea time for an equivalent period following recognised training in the above nautical/mechanical engineering establishment.

Courses Conducted At The School
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<table>
<thead>
<tr>
<th>Courses</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 2 Master (G2M)</td>
<td>39 weeks</td>
</tr>
<tr>
<td>Grade 3 Master (G3M)</td>
<td>26 weeks</td>
</tr>
<tr>
<td>Grade 4 Master (G4M)</td>
<td>26 weeks</td>
</tr>
<tr>
<td>Grade 4 Master Restricted (G4MR)</td>
<td>13 weeks</td>
</tr>
<tr>
<td>Grade 5 Master (GSM)</td>
<td>13 weeks</td>
</tr>
<tr>
<td>Deck Cadet DA1</td>
<td>9 weeks</td>
</tr>
<tr>
<td></td>
<td>13 weeks</td>
</tr>
<tr>
<td></td>
<td>26 weeks</td>
</tr>
<tr>
<td>Deck Cadet DA3</td>
<td></td>
</tr>
<tr>
<td>Deck Cadet DA5</td>
<td></td>
</tr>
<tr>
<td>Grade 2 Engineer (G2E)</td>
<td>39 weeks</td>
</tr>
<tr>
<td>Grade 3 Engineer (G3E)</td>
<td>26 weeks</td>
</tr>
<tr>
<td>Grade 4 Engineer (G4E)</td>
<td>26 weeks</td>
</tr>
<tr>
<td>Grade 5 Engineer (G5E)</td>
<td>13 weeks</td>
</tr>
<tr>
<td>Engineer Cadet EC1</td>
<td>13 weeks</td>
</tr>
<tr>
<td></td>
<td>13 weeks</td>
</tr>
<tr>
<td></td>
<td>26 weeks</td>
</tr>
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</tbody>
</table>

87
<table>
<thead>
<tr>
<th>Course</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC5</td>
<td>13 weeks</td>
</tr>
<tr>
<td>EC7</td>
<td>13 weeks</td>
</tr>
<tr>
<td>EC9</td>
<td>13 weeks</td>
</tr>
<tr>
<td><strong>Basic Marine Engineering Course</strong></td>
<td></td>
</tr>
<tr>
<td>Basic Ship Trade BST1</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Basic Ship Trade BST2</td>
<td>13 weeks</td>
</tr>
<tr>
<td>Ship Construction 1 SC1</td>
<td>13 weeks</td>
</tr>
<tr>
<td>Ship Construction 2 SC2</td>
<td>13 weeks</td>
</tr>
<tr>
<td>Ship Construction 3 SC3</td>
<td>13 weeks</td>
</tr>
<tr>
<td>Radio Telephony</td>
<td>1 week</td>
</tr>
<tr>
<td>Radar Observer (Full)</td>
<td>1 week</td>
</tr>
<tr>
<td>Radar Observer (Limited)</td>
<td>1 week</td>
</tr>
<tr>
<td>Sea Survival</td>
<td>1 week</td>
</tr>
<tr>
<td>Electronic Navigational Aid</td>
<td>1 week</td>
</tr>
<tr>
<td>Shipsmaster Medical</td>
<td>1 week</td>
</tr>
<tr>
<td>First Aid</td>
<td>1 week</td>
</tr>
<tr>
<td>Fire Fighting</td>
<td>1 week</td>
</tr>
</tbody>
</table>

**Note:**

1. **Shipsmaster’s Medical course is conducted at the main hospital in Suva.**

2. **The First Aid course is conducted by the St. John’s Ambulance Brigade in Suva.**

3. **The Firefighting course is conducted by the Suva Fire Brigade in Suva.**

4. **The deck rating course is conducted by the Fiji National Training Council instructors on ad-hoc basis on behalf of the school of maritime studies on agreement until such time when**
adequate staffs are available in the school. Duration of rating course is one week.

9.5 Development Plan to Meet SPUMS Code.

The Fiji School of Maritime Studies has an important role to play both in national training and also as the principal centre for South Pacific regional training.

The Advisory Committee on Uniform Maritime Standards have agreed that the Fiji School facilities are not up to the standard of the SPUMS Code particularly the engine room workshop facilities.

A report by the IMO Advisor to the Pacific Region in 1981 stated:

"During an inspection of the Fiji school, the training equipment situation was examined with members of the lecturing staff. Nautical training equipment for instruction in navigation, seamanship etc, is in reasonably good supply although further additions will be required when training to cover the full range of South Pacific certificate grades is undertaken.

However, the provision of marine engineer training equipment has been neglected in the past and serious shortages exist in a great deal of basic training."

In 1984, the School of Maritime Studies prepared a five development plan to upgrade its present facilities and to develop a marine engineering training facility for officers and ratings to meet the SPUMS /STCW require-
The proposed development plan consists of new buildings and training equipment, it is estimated that the project will be completed either in 1987 or 1988.

The new buildings consist of:

1. Marine engineering overhauling workshop/Diesel Lab
2. Engineering machine shop
3. Marine engineering simulator/Automation Laboratory rooms
4. Seamanship workshop
5. Three classroom block
6. Kitchenette/Canteen/Student Amenities/Library
7. Student dormitory block

The following are training equipment to be installed in the new buildings:
- Marine diesel engine simulator (NORCONTROL)
- 300 kW Diesel propulsion engine
- 2 A.C. Diesel generators/switchboard/synchronizing facilities
- Control desk for diesel engine and generators
- Refrigeration trainer and fault simulator
- Engine cooling water circulating system
- Steam turbine and condenser set
- Single cylinder engine with brake dynanometer
- De-Laval lub. oil purifier
- Hydraulic trainer unit
- Bomb calorimeter
- Two stage air compressor test bed
- Steam throttling and separating calorimeter
- Satellite Navigator
- Shaping machines
- Milling machines
- Lathes
- Diesel engine test bed
- Refrigeration demonstration unit
- Laboratory equipment

The following simulators are requested under the Norwegian Government:

- Marine Diesel Engine Simulator (NORCONTROL)
- Radar Simulator (NORCONTROL)

Successful completion of the proposed project will enable the school to teach any grade of certificate courses, both deck and engineering, supplementary courses, workshop practices, etc., for cadets/apprentices and upgrading students. The complete project will meet the standard required by SPUMS. The overall standard of the school will certainly match any international institution.

9.6 Teaching Staff.

The teaching staff is the core element of the school and it has the prime responsibility of formulating all
education and training programmes within the school and putting them into effect.

It is crucial that the teaching staff have the knowledge and experience of the responsibilities and function of an officer either, deck or engineer on board ships, in order that correct advice and guidance can be given to students.

It is also vital that the teaching staff is aware, not only of national educational and training requirements, but also those requirements which have been agreed and accepted internationally.

The standards required by the Code mean additional buildings and equipment which in turn needs additional staff and technicians for laboratories, workshops etc. It will also mean that the staffs will have the responsibility of preparing and writing lecture notes, term based programmes, lab. sheets and practical classes.

The senior lecturing staff will have the responsibility of overseeing the total programme and administration and also of ensuring that supporting activities involving; audio-visual aids, tutoring and counselling are planned and information is properly organized and fitted in to the programme at the appropriate time.

They also have the responsibility of organizing tests and examination and for providing advice and counselling as to remedial activities for those students needing it. Finally, there must be an ongoing internal assessment in
relation to the state of modern maritime technology to ensure that the education and training programme within the country is relevant and up to date.

The School of Maritime Studies consists of three departments:

1. Navigation
2. Marine Engineering
3. Shipbuilding

Courses conducted by the Navigation and Marine Engineering Departments are of technicians level and must be approved by the Fiji National Training Council and the Ministry of Transport and Works. Shipbuilding is of trade element level and approval is needed only by the Fiji National Training Council.
Existing staff in the school as shown in the organizational structure Table 18 are as follows:

<table>
<thead>
<tr>
<th>Designation</th>
<th>Number of staff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of School</td>
<td>1</td>
</tr>
<tr>
<td>Senior Lecturers</td>
<td>2</td>
</tr>
<tr>
<td>Lecturers</td>
<td>7</td>
</tr>
<tr>
<td>Assistant Lecturers</td>
<td>4</td>
</tr>
<tr>
<td>Technicians</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

Non teaching Staff:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of staff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secretary/Typist</td>
<td>1</td>
</tr>
<tr>
<td>Caretakers</td>
<td>3</td>
</tr>
<tr>
<td>Security</td>
<td>2</td>
</tr>
<tr>
<td>Advisor</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
</tr>
</tbody>
</table>

Departmental teaching commitment per week:

<table>
<thead>
<tr>
<th>Department</th>
<th>No of Courses</th>
<th>Hours/Week</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navigation</td>
<td>3</td>
<td>35</td>
<td>105</td>
</tr>
<tr>
<td>Marine Engineering</td>
<td>3</td>
<td>35</td>
<td>105</td>
</tr>
<tr>
<td>Shipbuilding</td>
<td>2</td>
<td>35</td>
<td>70</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>280</strong></td>
</tr>
</tbody>
</table>
Staff teaching commitment per week:

<table>
<thead>
<tr>
<th>Staffs</th>
<th>No of Staffs</th>
<th>Hours/Week</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head of School</td>
<td>1</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Senior Lecturers</td>
<td>2</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>Lecturers</td>
<td>7</td>
<td>20</td>
<td>140</td>
</tr>
<tr>
<td>Asst. Lecturers</td>
<td>4</td>
<td>24</td>
<td>96</td>
</tr>
<tr>
<td>Servicing</td>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>280</strong></td>
</tr>
</tbody>
</table>

Proposed SPUMS Code Programmes:

<table>
<thead>
<tr>
<th>Department</th>
<th>No of Courses</th>
<th>Hours/Week</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Navigation</td>
<td>4</td>
<td>35</td>
<td>140</td>
</tr>
<tr>
<td>Marine Engineering</td>
<td>4</td>
<td>35</td>
<td>140</td>
</tr>
<tr>
<td>Shipbuilding</td>
<td>2</td>
<td>35</td>
<td>70</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>350</strong></td>
</tr>
</tbody>
</table>

It is physically impossible for the present staff to meet the demand and workload necessary to ensure that standards and requirements of the SPUMS Code are effectively carried out.

These demands have made a serious impact on the school staff. However, the school has made the following proposal for recruiting additional staff to meet the Code:
Additional Staff | Number | Department         | Hrs/Week |
-----------------|--------|--------------------|----------|
Senior Lecturer  | 1      | Marine Engineering | 16       |
Lecturers        |        | "                  | 20       |
                | 1      | "                  |          |
                | 1      | Navigation         | 20       |
                | 1      | Shipbuilding       | 20       |

Total = 4

Total = 76

Total Staff teaching commitment per week = 280
Additional staffs teaching per week = 76

Total = 356

Proposed departmental teaching per week = 350

The above highlight the inadequacy of teaching staff available in the school to meet the Codes requirements. It is the responsibility of the Ministry of Education to ensure that adequate staff is recruited in order for the school programme to be carried out effectively.

9.7 Staffing Problems

One criteria for determining any training institution has reached an acceptable standard is the qualification and experiences of its teaching staffs. Analysis of the present staffing situation is alarming. Inadequate and deteriorating and Serious concern is expressed by the shipping industry and the Fiji Marine Board regarding the staff inadequacy. This concern is shared by the Regional Governments since the school is recognised as the Central Regional Maritime Training Centre.
It is rather sad to see that one of the best located Maritime Schools in the South Pacific is under utilised because of staffing shortages.

Captain Boyack, Principal Examiner for Master and Mates at the Ministry of Transport - New Zealand commented in his 1981 report:

1. "I expressed my concern about the staffing of the college with qualified and experienced instructors who are in short supply. Suitable instructors are not available in Fiji and have to be imported at great difficulty and cost."

2. "When the contract of these officers expires there does not appear to be any local individuals with the qualification and experience to carry out their functions."

The Regional Advisory Committee on Uniform Maritime Standards commented during their eighth meeting in Suva 1985:

"It is noted with concern that there has been a long-term problem of continuity of staffs at the Fiji school and this have regional effect. The Fiji school was very much a subject of regional concern and hence an appropriate matter to be considered for possible assistance."

It is high time for the Government of Fiji to recognized the importance of the Fiji school whose role is not only to meet national but also regional and international
standards. It is the only institution in Fiji playing the important role of up-grading all maritime programmes and aligning them with international conventions and requirements.

Therefore, all authorities concerned with maritime activities should seriously consider and work together to improve the staffing situation in the school and to strongly support the school’s five year development plan. This includes furnishing the school to international standards. The proposed organisational structure in Table 16 shows the minimum staffs needed to balance the proposed programmes refined by the Code.

A recent discussion held earlier in the year between the Author and the present Head of School the following was concluded:

1. The school of maritime studies could have a very good future and play a vital role in the development of sea training for the South Pacific region provided:

   - Suitable qualified staffs with experience are continually employed;

   - Appropriate training equipment is supplied and buildings developed, as proposed, to ensure that the school becomes self sufficient to cater to the Code's needs. That this accomplished without having classes divided between the Fiji Institute of Technology at Samabula, and the school of maritime studies at Laucala Bay. Since these facilities are over four km apart, dividing classes causes program disruption and discontent to students and the administration of
2. A very careful staff development programme should be followed, so that existing staffs (local) are not only encouraged to follow an academic study but also seek practical experience by sailing as watchkeeping officer prior to sitting for their certificate of competency examinations. Academic qualification alone will not make good teachers without maturity and valuable practical experience.

3. If the above is not monitored and controlled, the school will soon lose its reputation and credibility as one of the best maritime training institution in the south pacific.

Another factor to be seriously considered is the salary structure between the marine department, the school of maritime studies and the private shipping companies. It is a global problem, because of inadequate salary structure in the educational sector. Prospective teachers first preference is for the private shipping companies, second is for the marine department and last is the school. This is the situation in Fiji.

Other factors to be considered in the Fiji situation is the recommendation by "Nichol and Hurst" on government salary structures. One of their recommendation is that all teachers at the Fiji Institute of Technology have a Trade Certificate as an entry requirement to the teaching profession. This is physically impossible for the school of maritime studies. The school is involved with not only local but also international requirements and this means that staffs recruited to the school must have
international qualification if the school is to be recognized in the international community. Therefore the school salary structure must be reviewed for those prospective teachers whose qualification and experienced are much higher than those recommended by Nichol and Hurst.

9.8 Local Staffs Development Programme.
---------------------------------------------

The school of maritime studies has already prepared a five year development plan for upgrading the qualification and experience of its existing local staffs. For this to be effectively implemented it need Government support and assistance.

To obtained a master or chief engineer foreign going certificate of competency requires a minimum of ten years, hence, it will also take the staffs in the school the same time to be qualified to international standard. The reason being:

1. The existing maritime legislation is inadequate and out dated in comparision with current IMO Conventions on international standards and requirements.

2. The existing examination and certification of the present legal Fiji system is below the international standards and requirements.
3. Sea service in terms of power and size of vessels etc acquired by most local staffs is inadequate even to be considered for a Second Mate or Second Engineer foreign going certificate of competency.

4. Inadequate academical background to provide entry into University, Polytechnics etc. for Diploma or Degree courses.
The school must revise and reconsider the recruitment process of local staffs taking into account the above criteria for selection. It is important to consider that if the low qualified staff members are recruited and sent abroad for further training and are unsuccessful in their examination, then the school will be saturated with low qualified staff which will lower the the standards of education and training given to the students.

However, the long term solution is to send the existing local staffs abroad for further training and experience and if continuity is required replace them with expatriates to man the school. For this to be carried out effectively it certainly needs Government support. At the time of writing this project, there are four vacancies in the school.

It is therefore urgent that the Government Authority responsible for staffing the school seriously consider the staffing situation and its staffing development programme.

9.9 Memorandum of Understanding for Regionalising the
Fiji School of Maritime Studies.

Coincident with the progress made in the completion of the SPUMS Code, is the agreement between the South Pacific member states to regionalize maritime training. The Regional Shipping Council have endorsed a Memorandum of Understanding (see Appendix 4) which has been guided through its formative stages by SPEC. The regional concept is part of the SPEC mandate and through the Secretariat the Memorandum of Understanding has been approved by
the 11 participating Sovereign States which include Fiji. They have agreed to recognize three maritime training centres located in Fiji, Papua New Guinea and the Solomon Islands. These centres are to service the needs of the region in conjunction with maritime training and other projects, (SPUMS CODE).

This regional agreement is aimed at providing an overall maritime training capacity to meet the South Pacific Island community requirements. It should avoid duplication and assist in the implementation of standards of certification and training. It should harmonize the work of the maritime administration and marine departments responsible for technical matters.

The Fiji School of Maritime Studies has therefore agreed to:

- Provide training and examination for grade 4 certificate and above

- Provide regional examiners as required

- Design regional courses based on SPUMS for offer on a regular basis

- Co-ordinate training programmes to avoid duplication

- Maximise the utilization of scarce teaching staff
- Circulate training programmes to participating countries

- Introduce a scale of uniform economic fees

- Maintain a level of staff and equipment essential to promote and maintain high standards.

The Fiji Marine Board Examination Centre have agreed to:

- Hold regular schedules of examination

- Maintain adequate staffing by properly qualified personnel

- Share an examination question bank and maintain security of the examination system

- Issue Pacific Island Certificate of Competency.
Existing:

H.O.S.

- Advisors
- Sec/Typist
- Caretakers
- Security

Shipbuilding

S/L

L

A/L

Tech.

104H

Key:

H.O.S.  Head of School
S/L    Senior Lecturer
L      Lecturer
A/L    Assistant Lecturer
Organisational Structures

Proposed:

TABLE. 13

<table>
<thead>
<tr>
<th>Organisational Structures</th>
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<tbody>
<tr>
<td><strong>Proposed:</strong></td>
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</tbody>
</table>

**Key:**
- **H.O.S.** - Head of School

**Shipbuilding**
- S / L
  - L
  - L
  - A/L
  - Tech.

**Engineering**
- S / L
  - L
  - L
  - L
  - A/L
  - Tech.

**Deck**
- S / L
  - L
  - L
  - A/L
  - A/L
  - Tech.

- Sec/Typist
  - Administrations
  - Caretakers
  - Security
10.0 MARITIME TRAINING IN OTHER COUNTRIES

10.1 Purpose.

The purpose of this chapter is to briefly summarize the various selected countries' maritime training structures leading to a certificate of competency and an academic qualification. There are two schemes to achieve these programmes:

1. Hawse-Pipe Scheme

2. Front Ended Scheme

1. Hawse-Pipe Scheme.

In the USA, UK and some commonwealth countries including Fiji, it is possible for anybody to start a seafaring career as a rating either deck or engineer and eventually by means of self-study or completion of short term preparatory courses offered by seafarer's organisations or private schools to qualify as a certificated navigator or engineer officer.

2. Front Ended Scheme.

Most developed countries throughout the world particularly the European countries, the majority of seagoing officers who receive certificate of competency have success-
fully completed an approved three or four years comprehen-
sive and specialized training directed towards an academic degree or diploma and their certificate of competency afterwards.

Most developing countries are now preparing their maritime training structures towards the Front Ended Scheme since the Haws-Pipe system is no longer appropriate due to high technology of ships being built today.

10.2 Maritime Training in the UK.
-------------------------------------

Since Fiji is a former colony of the UK, it would be appropriate here to highlight the inadequacy of the UK system of training and the need to introduce and implement the Front Ended Scheme to compare and align with other developed countries. It would also be appropriate here to summarize the history of the UK system in order to understand that there must be a change for Fiji.

During the nineteenth century, mariners in UK were required for the first time to display their professional competence through the medium of examinations. The power to issue certificate of competency in the UK was delegated to the Board of Trade and this situation has remained basically unchanged to the present day.

The Regulation and Standards of examination is administered by the Principal Examiner either deck or engineer and strict rules govern physical fitness, minimum age limits and industrial experience (sea service).
The Principal Examiners staffs set the subject syllabuses, conduct the examination and assess the candidates.

Attendance at a formal course of study is not a pre-requisite for a certificate of competency examination. Nevertheless, before a certificate is issued a candidate must show that he has followed certain necessary short training courses which will ensure his proficiency in certain areas concerning safety.

In previous times private schools provided preparatory courses for certificate examinations but little attempt was made to provide a coherent course of education.

Courses were directed strictly towards passing the examination. Later certificate preparation courses were and still are, provided by the state education authorities in technical colleges and an attempt is made to provide students with some background knowledge. However, examination success is still the prime objective.

Because of the prolonged periods between college attendance and certificate examinations, much of the work associated with each qualification is repetitious. Also, by the time the master or chief engineer certificate is attempted, candidates are of mature years.

Modern technological and sociological changes in the maritime industry have left the traditional method of training behind, it is no longer satisfactory.

It is important to note that, although maritime education has been provided in technical colleges from the beginning of this century, it has not lead to educational awards.
and was largely separated from other disciplines. Thus, in the post second-world-war years, when there was emphasis on expansion of science and technology courses, maritime education in the UK lagged behind.

With the introduction of the Ordinary Diploma and Degree courses in nautical science in 1964/65 and granting of the marine engineering degrees, maritime education in the UK became firmly established within the national system of education.

The history has been a brief outline of the development of maritime education in the UK from its "ad-hoc" beginnings to its substantial incorporation within the national system of education. This has been done not only because it illustrate a trend, but because it highlights a particular difficulty in the UK system.

Education and Training Scheme.

The cadet or trainee deck officer may qualify for a certificate of competency at either class 3, 4 or 5 upon satisfactory completion of a minimum training period approved by the Department of Transport. The departments approved courses consist of sandwich type courses where students spend alternate periods under training at sea, where emphasis is upon practical training, and at a nautical college where the emphasis is upon theoretical studies.
Diploma in Nautical Science.

1. Entry qualification - Applicant should hold or expected to obtain G.C.E. "O" level or equivalent in mathematics and physics, together with two other academic subjects all at a minimum level of grade "C" G.C.E. (or equivalent).

2. Format of training, the standard scheme provides for five phases:

   Phase 1. Induction period of one month duration covering safety matters at nautical college.

   Phase 2. Initial sea period, two voyages at sea gaining practical experience of the running of ships, totalling about 8 to 10 months.

   Phase 3. Consist of 9 months in the college leading to the BTEC Diploma examination in Nautical Science.

   Phase 4. Consist of about 12 months of sea service during which the cadet will be involved in bridge and cargo watch-keeping etc.
SCHEMATIC DIAGRAM OF THE TEC/SCOTEC DECK CADET SCHEME

Phase I — Pre Sea Induction

Phase II — Initial Sea Service

Phase III — College

Phase IV — Final Sea Service

Phase V — College

FIG. 5

109N
Proposed 3 year Engineer Cadet Training Scheme

For HNC
Minimum 4 - 'O' Levels, Grade 'C' or above, Maths, suitable Physical Science subject, English or subject including English subject usage, and at least one other academic subject.

For HND
Same as HNC with 'A' Level Maths and/or Physics, preferably both.

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Academic 840 hrs</th>
<th>Practical 630 hrs</th>
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<tbody>
<tr>
<td></td>
<td>3 day x 7 hrs/day x 36 weeks = 756 hrs Academic</td>
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<tr>
<td></td>
<td>1 day x 7 hrs/day x 12 weeks = 84 hrs Academic</td>
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<tr>
<td></td>
<td>2 day x 7 hrs/day x 24 weeks = 336 hrs Practical</td>
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<tr>
<td></td>
<td>1 day x 7 hrs/day x 12 weeks = 84 hrs Practical</td>
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</tr>
<tr>
<td></td>
<td>5 day x 7 hrs/day x 6 weeks = 210 hrs Practical</td>
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</tr>
<tr>
<td>1</td>
<td>Totals: Academic 840 hrs</td>
<td>Practical 630 hrs</td>
</tr>
<tr>
<td></td>
<td>(Including 2 day Fire + Survival)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 weeks Holidays (Minimum)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sea Service + Voyage Leave</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(7 months + 1 1/2 months)</td>
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</tr>
<tr>
<td></td>
<td>5 day x 7 hrs/day x 36 weeks = 1260 hrs Academic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 day x 8 hrs/day x 6 weeks = 240 hrs Practical</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Totals: Academic 1260 hrs</td>
<td>Practical 240 hrs</td>
</tr>
<tr>
<td></td>
<td>(Including 4 day Fire, First Aid, C.P.S.C.)</td>
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</tr>
<tr>
<td></td>
<td>7 weeks Holidays (Minimum)</td>
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<tr>
<td></td>
<td>Sea Service + Leave</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3 months + 1 month)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DTP Class 4 Certificate of Competency</td>
<td></td>
</tr>
</tbody>
</table>

Qualifications on Completion of Training

BTEC HNC in Marine Engineering
or BTEC HND in Marine Engineering Depending on entry qualifications

FIG. 6
Phase 5. Final college phase of approximately 15 weeks, leads to the Department of Transport Class 4 Certificate examination and an award of Higher Diploma.

Higher Diploma in Marine Engineering.

1. Applicants for HND are required to have GCE "O" level qualifications similar to those required for Higher National Certificate (HNC). In addition, applicants should possess "A" level mathematics and physics and a passed in any other science subject.

2. Format of training, the standard scheme provides 4 phases of 3 years duration:

Phases 1. Phase one is 49 weeks college course involving both academic and practical work.

Phase 2. First period of sea service, generally of about three and a half months duration, during which cadets follow guided technical studies.

Phase 3. Again consist of a 49 weeks college course involving academic and practical work.

Phases 4. The final practical phase is spent at sea to complete a total sea service of not less than 9 months.

At the end of the training scheme cadets sit an oral examination for the Department of Transport Class 4 Certifi-
cate of Competency. Also, successful completion of the cadet training scheme gives exemption for various subjects except the practical engineering knowledge for the Department of Transport Class 1 and Class 2 Certificate of Competency.

Degree Scheme.

The scheme provides students with "A" level physics, mathematics, chemistry and any other science or technical subject to pursue a University or Polytechnic degree.

Candidates may take a three years full time degree in Nautical Science or a four year full time degree in marine engineering. Both require a minimum sea time of one year before sitting for a Watchkeeper Certificate of Competency.

10.3 Maritime Training in Australia.

Tertiary education (i.e. post-secondary education) in Australia is divided into three sectors:

- the university sector
- the advanced education sector
- the technical and further education sector.

The latter sector comprises technical colleges which provide technical education and training at trade, or craft, and technicians level. Almost all technical colleges are established and operated by State Government with
some financial assistance from the Federal Government for capital works and equipment. Secondary school leavers can transfer into technical colleges after year 10 i.e. 2 years before completion of full secondary education.

The remaining sectors i.e. the universities, and colleges of advanced education provide what is generally referred to as "Higher Education". Entry for school leavers is after completion of the full secondary education course, and specific school leaving qualifications are required for most courses.

Prior to the establishment of the Australian Maritime College some maritime training was provided in a few state technical colleges, cadetship was provided for deck officer trainees by the larger shipping companies and some limited pre-sea and midcadet - release formal training was being introduced by one of the technical college. One of the shipping companies had also introduced a cadetship scheme for engineer officer trainees which involved 2 to 3 years formal training with about one year at sea on commercial vessels. The associated part - time technicians courses in the technical colleges qualified for some exemptions from the Statutory examinations for the certificate of competency, which were administered by the Federal Department of Transport.

The many investigations, discussion and enquiries-involving the shipping and fishing industries, Regulatory Authorities and the commission on Advanced Education led to the development of a proposal for the Federal Government to establish a National Maritime Training facility.

In its report in May 1974 the commission concluded that
training for the shipping and shipping industries was inadequate; and that the Australian Government should establish a central maritime college within the advanced education sector. The college should offer courses for deck, engineer and radio officers, and masters of large fishing vessels.

The Maritime College Act 1978 formally established the Australian Maritime College reviewing their traditional system adopted from UK pattern which is no longer adequate and work was proceeding towards the STCW 78 Convention. As a national institution - establish and fully funded by the Federal Government the College is the only one of its kind in Australia providing exclusively for maritime and maritime related education and training.

Outline of Academic Programmes at AMC.
________________________________________

1. Diploma in Nautical Science  
2. Bachelor of Applied Science (Nautical Studies)  
3. Diploma in Marine Engineering  
4. Bachelor of Engineering (Maritime)

The cadet scheme for both deck and engineering are similar to that in UK i.e. successful completion of 3 or 4 year programmes will be awarded a Diploma in their respective field of study and a Watchkeeper certificate of competency or a Bachelor of Applied Science/Bachelor in Engineering with a Watchkeeper certificate of competency, depending on their entry requirements. FIG 3 shows the various structures in the above courses.
OUTLINE OF ACADEMIC PROGRAMS AT A.M.C.

NAUTICAL

B.Sc. (Commercial Shipping Practice; Ship Technology; or Port Operations)

Diploma

Diploma & W/K Cet.

To W/K Cet.

Degree

ENGINEERING

Maritime

BE.1

BE.2

BE.3

BE.4

Diploma & W/K Cet.

To W/K Cet.

Degree

FISHERIES

B.Sc. (Fish Technology)

B.Sc.1

B.Sc.2

B.Sc.3

Cert. of Technology & W/K Cet.

POSTGRADUATE COURSES

Hydrographic Surveying

Commercial Shipping Practice

Advanced Marine Engineering

Fisheries Technology

MISCELLANEOUS COURSES

Various Short Specialist Certificate of...
OUTLINE OF ACADEMIC PROGRAMS AT A.M.C.

NAUTICAL

B.Sc.1  B.Sc.2  B.Sc.3

C.1  C.2  C.3  C.4

ENGINEERING

BE.1  BE.2  BE.3  BE.4

FISHERIES

B.Sc.1  B.Sc.2  B.Sc.3

POSTGRADUATE COURSES

Hydrographic Surveying
Commercial Shipping Practice
Advanced Marine Engineering
Fisheries Technology

MISCELLANEOUS COURSES

Various Short Specialist
Certificate of Competency
Ratings, Basic & Upgrading
In the United States, the training of seafarers is a product of the efforts of the Federal and State Governments, the shipping industry and private schools. Prospective officers are trained either at the merchant marine academies or by means of special short term schemes carried out at schools operated by seafarers organisations or private interests.

The most important requirements for obtaining an original or higher grade officers certificate of competency are possession of a stipulated amount of sea service and the passing of both physical and written professional examinations administered by the US Coast Guard.

The type of training, carried out in the US is either through the "Hawse Pipe" or the "Front Ended" scheme. The Front Ended scheme is carried out by merchant marine academies throughout the US and is a four year undergraduate programme leading to a Bachelor of Science degree and a Coast Guard license upon satisfactory completion of the licence examination as third mate or third engineer.

Applicants for admission to the academies must be between the ages of 17 and 21 years and graduates of a secondary school and must pass a competitive entrance examination. At the time of starting their training, students have a choice between a course of study for future navigating officer or for prospective marine engineers.

The programme at State University of New York (SUNY) and the US Merchant Marine Academy (USMMA) at Kings Point
combines formal academic studies leading to the Bachelor of Science or Bachelor of Engineering degree, coursework and practical experience at sea preparing for the license as Third Mate or Third Assistant Engineer and course in Naval Science leading to eligibility for a commission as an officer in the Naval Reserve or for active duty in the Navy. Graduates are also eligible for commission in the US Coast Guard and the National Oceanographic and Atmospheric Administration (NOAA).

The three selected countries training programmes have been highlighted to view that all three have changed from the "Hawse Pipe" system to the "Front Ended" system because of the current modern shipping technology, developing throughout the world and that the "Hawse Pipe" type of training is no longer appropriate. Fiji should therefore consider revising its training system and structures. They should align with these selected countries if international standard is to be achieved.

Another important point to consider is the US training system, where Naval Science curriculum is included in the main merchant marine programme to prepare students for Naval service. Fiji could adopt this pattern of training to prepare students not only for the merchant marines but also for its Naval Reserve. Earlier discussion on the subject was welcomed by the Naval Squadron, Ministry of Home Affairs and the Local Shipowners Association.
11.0 PROPOSED SYSTEM OF TRAINING.
-----------------------------------

11.1 Analysis of the Present Training System.
-----------------------------------------------

The present training system in Fiji is below international standard due to the outdated maritime legislation. However, with the delay of the revised Marine Bill being presented into Parliament, the Fiji Marine Board has approved the School of Maritime Studies to go ahead programming and teaching the new courses required by the SPUMS Code.

The prime purpose of training is to ensure that ships are operated safely and efficiently. Training leading to recognised qualification is also necessary to attract a sufficient supply of able men and to prepare those already serving for the many technological and managerial changes which are taking place. These changes will continue, they are already having a pronounced effect on the training that is required not only in Fiji but in the shipping industry throughout the world.

The present training arrangement for seafarers in Fiji forms a varied and complicated pattern. There are programmes of training for every grade of seafarer, but an outstanding point is that no training courses are compulsory apart from a few relatively short ones. Some seafarers may study privately, some may take correspondence courses and others may attend full or part time at workshops or in training schools.
A proposed national training scheme is shown in sub-chapter 11.3. The cadet schemes both deck and engineering are considered to be more appropriate and important in ensuring that standards required by the Code are maintained and that the systems are parallel with other cadet systems in developed countries.

11.2 Impact of the Revised SPUMS Code.

At the time of the adoption of the STCW Convention in 1978, a majority of the established maritime training countries had already possessed a well established maritime infrastructure which included excellent maritime education and training facilities, examination and certification system etc. The impact on them was very little and only minor adjustment were required to meet the Convention requirements.

With the introduction of the SPUMS Code, the Fiji Marine Board has accepted and approved the Code in principle. Progress is being made to include the Code in the maritime legislation. To accept the Code, the Fiji Marine Board should seriously consider its impact on the whole maritime infrastructure. The School of Maritime Studies is also affected.
The impact of the Code on the Fiji Marine Board are:

- Updated maritime legislation

- The establishment of a proper maritime safety administration

- Establishing a proper system for examination and certification of seafarers

- A means of controlling and monitoring levels of education and training

- Control and monitoring of pre-requisite of seafarers as condition of entry to the examination for certificate of competency.

- Qualification of senior staffs

The impact of the Code to the school is to ensure that the followings are to be of international standards:

- buildings and facilities

- laboratories and practical workshops

- training equipments

- qualification of teaching staffs

- syllabuses

- examination system
The prime objective of this chapter is to urge both the Maritime Administration and The School of Maritime Studies to be aware of the impact of this Code and for both to prepare their organisations to meet the Codes requirements and to understand the importance of becoming a Party to the STCW 78 Convention as well as its advantages and dis-advantages.

11.3 Proposed National Training Scheme.
-----------------------------------------------

The present training system and arrangement at best provide some, but not enough, officers with first class training and experience comparable with the best available in other countries. I believe that time has come to ensure that all future cadets and officers both deck and engineering benefit from systematic and progressive training of a high quality strictly related to modern equipment, its operation and management.

In chapter 10, I highlighted the two types of training system. The "Front Ended Education" is considered better and most effective. This is carried out through the cadet training scheme. Though Fiji has already established its own cadet training scheme both deck and engineering, it is still below international standard. The proposed scheme designed along the pattern of other countries and to the requirements of the Code is as follows:

- requirements and standards to comply with the SPUMS Code

- the naval requirements to suit the navy

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The arrangement of education, training and examination is integrated into a coherent pattern with appropriate standards recognised by the National Education System.

It is recommended that the existing cadet scheme be continued until the school's five year development plan is completed. Then the new buildings and equipment will provide the necessary training for the cadets to meet the Code.

The proposed cadet scheme is to consist of:

1. A three years Diploma in Nautical Science
2. A four years Diploma in Marine Engineering

Prior to the commencement of the proposed cadet scheme, it is essential that the maritime administration review and update all necessary legislation pertaining to education, training, examination and certification including official documentation required by the proposed scheme.

In order to strictly ensure that high academic standards are maintained, there should be a selection and recruitment panel. It should consist of representatives from the shipping industry, the naval squadron and the school. It should process all applications to the cadet scheme instead of their being recruited by shipping companies. The maximum number of cadet intakes should be 15 deck cadets and 15 engineering cadets per year. Successful cadets must be medically fit to suit the SPUMS and Naval requirements.
The complete scheme must be Government funded with assistance from shipowners to ensure that cadets education and training is completely free. Uniforms, sports requirements, naval requirements fortnightly allowances etc. should be included.

Entry Requirements.

Entry requirements to both deck and engineer schemes are:

1. University entrance certificate with good passes in:
   - Mathematics
   - Physics or Physical Science
   - English
   - Chemistry or other science subject

2. Suitable passes in some other examination of equivalent standard as approved by the Head of School, provided the candidate can show evidence of being able to cope with the academic demand of the scheme;

3. Suitable passes in an overseas examination of equivalent standard as approved by the Head of School, provided the candidate's spoken and written English is of a standard that he/she can benefit from the course.

Format of training - the scheme of training follows a sandwich pattern with alternative periods of sea service and school-based work which together make up a structured
course of planned practical training integrated with professional and Diploma studies. Each phase contain work which is assessed and the cadets performance counts toward the final award.

Deck Cadet Scheme.

---------

Phase 1 - An 18 week cadet officer military training course with the Naval Squadron

Phase 2 - Induction course of two to three weeks at the school

Phase 3 - Two - three months initial sea service

Phase 4 - An 18 weeks course at the school

Phase 5 - Six months sea service

Phase 6 - An 18 weeks course at the school

Phase 7 - Six months sea service

Phase 8 - An 18 weeks course at the school
Curriculum:

Shipping Economics
Marine Operation
Marine Transportation
Meteorology
Mathematics
Applied Science
Electronic Navigation Aids
Principle of Navigation
General Ship Knowledge
Seamanship
Navigation: Practical
  - Chartwork
  - Radar Observer
Naval Architecture
General Studies
Management
Signals
Marine Machinery System
Electrotechnology
Maritime Law
Naval Science
Phase 1  An 18 weeks cadet officer military training course with the Naval Squadron.

Phase 2  Induction course of 2-3 weeks at the school.

Phase 3  Initial sea service.

Phase 4  An 18 weeks course at the school.

Phase 5  Six months sea service.

Phase 6  An 18 weeks course at the school.

Phase 7  Six months sea service.

Phase 8  An 18 weeks course at the school.

Phase 9  Three - four months workshop practice at the school.

Phase 10 An 18 weeks course at the school.
Planned training at sea: For both deck and engineering cadets — in view of the interval between school phases, the importance of maintaining the continuity of academic studies cannot be stressed too forcibly. It is the responsibility of both the school and sponsoring companies to ensure that regular contact is maintained with their cadets during the sea periods. Cadets should be encouraged to develop their studies using their ships as a laboratory in order that they may enter each school phase with sufficient professional knowledge to make further studies relevant. Project work is an important feature of the sea phases.
An essential feature of the Diploma schemes is that cadets complete a period of planned training at sea in accordance with the SPUMS Code requirements and the Fiji National Training Council cadets record book. The record book, duly completed by the masters, chief engineer and senior ship’s officers of the ships in which sea service is performed will provide proof of planned training at sea.

Awards

Upon successful completion of the proposed programme, candidates will receive the following awards:

1. Diploma in Nautical Science & Deck Watchkeeper Certificate of Competency:

2. Diploma in Marine Engineering & Engine room Watchkeeper Certificate of Competency.

3. Eligibility for a commission as an Officer in the Naval Reserve or for active duty in the Navy.

Both Diploma programmes should give exemption to all written exams required for Class 2 Master and Class 2 Engineer except the orals, which will still be maintained by the Fiji Marine Board or the Maritime Safety Administration.

Provided that strict rules are maintained and carried out.
effectively, ensuring that the SPUMS Code and the National Education Authority’s requirements are met, the Fiji Government should seek approval from Australia and New Zealand so that Diploma Graduates both Deck and Engineering from the school have eligibility to enter the following courses:

1. Class 1 Master
2. Class 1 Engineer
3. Diploma/Degree in Nautical Science
4. Diploma/Degree in Marine Engineering

11.4 Harmonization of the Proposed Scheme in the Maritime Industry.

To harmonize the proposed training scheme, it is necessary that the school form a committee to consist of representatives from:

- Local Shipowners Association
- Overseas Shipowners Association
- Fiji National Training Council
- Fiji Marine Board
- Ministry of Home Affairs

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The Committee is to be informed that the Fiji Marine Board has accepted and approved the SPUMS Code in order to upgrade all grades of certificate of competency to meet international standards since the Code contains the STCW 78 Convention.

The same Committee can also be utilise as an Advisory Board to ensure that standards are monitored and maintained to comply with the requirements of the School, the Navy and the Fiji Marine Board.

The Committee should also be informed that Fiji has agreed and signed the Memorandum of Understanding:

- To utilize the Fiji school of maritime studies as a regional training centre;

- For the Marine Department to become the regional examination centre.

The two centres plays an important roles in providing manpower requirements not only for Fiji but also for the pacific region.
The Committee should also understand that, the Code meets the minimum requirements of the STCW Convention. It therefore gives the advantages and dis-advantages of becoming a Party to the STCW Convention which is important considering that the Fiji ships are not only trading locally but also internationally.

Therefore, it is of prime importance for the shipping industry, maritime administration and the school to formulate a strategy ensuring that all necessary requirements of the Code and the proposed scheme are met.

11.5 Proposed Sea Training Programme.

The sea training component is an important aspect of the programme related to the Watchkeeping Certificate, deck and engineering. This component should be seen as an extension of the school programme and for this reason, it is important that there is an effective and close co-ordination and co-operation between the personnel aboard ship and at the school.

A modern merchant ship engaged in commercial voyages with its small but highly trained (very often specialist) crew, may be subject to quick turn around in ports and frequent changes in its crew. This tends to make training activities somewhat difficult and possibly fragmented, and means that "on-the-job" training will have many problems and difficulties aboard ship.

It is crucial therefore that a properly structured and organised programme of activities is followed, in order that this period of "hands-on" experience aboard ship can
be fruitful and effective.

The cadet scheme both deck and engineering is under the control of the school, however, the maritime administration monitors the system to ensure that it is complying to suit their requirements.

The school is also responsible to see that proper sea service is carried out on local and large foreign-going vessels to comply with the Code requirements. This is necessary for the Watchkeeper Certificates.

The bulk of the Fiji fleet are of smaller size and very few large vessels are trading both locally and internationally. Therefore, the school together with the shipping industry and the Maritime Administration should seek assistance from regional member countries including Australia and New Zealand so that school cadets can sail on board their ships to gain the necessary experience required for the watchkeeper and certificate of competency certificates.

In response to the school request an informal meeting took place at the Nauru Consulate office in Suva during November. This meeting was attended by a Nauru Government Official, Director of Marine and the Head of School of Maritime Studies. An agreement was reached that the Fiji Government would make an official request to the Nauru Government for the school cadets to sail and gain experiences on board their ships. It is advisable to follow up this discussion again since there was an indication of Nauru’s support of the scheme.
The sea training programme should be structured along the lines of and be similar to the pattern followed in developed countries like U.K., Australia and USA with an effective and close co-ordination and co-operation between the shipping companies and the school.

For the proposed programme to work out effectively, it needs a well structured scheme supported by cadet record books, sea projects, and other necessary documents to use as evidence that sea services were carried out effectively and constructively.

It is recommended that the IMO "sea training guidance notes" and the UK engineer record book be revised and tailor made to suit Fiji’s sea training purposes.
12 RECOMMENDATION FOR THE IMPLEMENTATION OF THE PROPOSED SYSTEM

12.1 Criteria for the National Process of Training.

In the maritime industry, the international conventions, recommendations, resolutions and codes, likewise the national legislation and ordinances all focus on navigational practices, equipment design and construction, maintenance and operation of ships etc., with a view to achieving maximum practicable safety and protection of the environment.

The common denominator and most important factor in these endeavours is the human element, the development of a man who will design perfect equipment, install it properly, operate it efficiently and safely, and maintain it adequately. The criteria to achieve this on a national basis inter alia are:

1. The Government policies must be clear and be accompanied by the means to execute them.

2. There must be a balance of ideas, all interested parties, international, national or private must be identified at the initial or early stages and be allowed to participate effectively.

3. The requirements of all the interested parties to make effective contribution must be made by the Government.
4. It will be necessary to establish a working group of competent people in the indentified areas of interest to facilitate the co-ordination.

5. The legislation or legal establishment of such an instrument to create awareness on a national and international level thereby preventing diversification in implementation say, in training and also promoting acceptable and respectable scheme of training.

6. The task of the working group should include, amongst others, the monitoring of progress, ensuring that decision are geared towards objectives, modification of objectives with international and national developments, and also that feedbacks are in accordance with expectancy.

7. The working group must be representatives of all the interested parties.

12.2 Role of the Fiji Marine Board Examiner.

The purposes of examinations for certificate of competency as seafarers are primarily to promote safety at sea and more recently, to minimise pollution of the marine environment.

CAP. 159 of the Fiji Marine Board Ordinance give power to the Board to do everything necessary for the purposes of the examinations and, in particular to regulate the qualifications of applicants for deck and engineer officers certificate of competency.
The marine board examiners are men who actually conduct the examinations at examination centres, they are not full-time examiners but, surveyors who spend most of their time surveying ships under the direct control of the Fiji Marine Board. They only carry out examination duties when their are required to do so.

Due to the inadequate examination infrastructure existing in Fiji, it is recommended that the following are considered for the Board to review the existing structure and upgrade where necessary to meet the SPLUMC requirements:

1. The Board's main concern is safety at sea.
   Understandably, therefore, its syllabuses for the statutory certificate are essentially drawn in terms of safety. The syllabuses do not adequately cover the full range of knowledge which should apply or be expected of efficient officers.

2. They do not, for instance take sufficient account of the need for some knowledge of the economic and commercial environment in which shipping operates, the need for education in management techniques, and the general need to develop a sense of cost consciousness in officers.

3. There must be a wider based syllabuses, which are kept under continuous review by a body on which the Government, shipping industry, and the training establishment are represented, to ensure that they reflects new needs within a reasonable time.
4. The examination for certificate of competency should be held within the training establishment while the practical knowledge and oral parts should still be maintained by the Board Examiners.

5. Create and establish a Regional Examination Centre with adequate international qualified staffs to manned them.

6. Due to the out-dated maritime legislation, there has been too much flexibility exercised by the examiners in not monitoring or maintaining the proper pre-requisite for candidates attempting their various grades of certificates.

7. This includes cadet record books, proof of industrial experiences either ashore or afloat, accepting non-official documentation for certificate requirements, accepting low sea service in terms of tonnages, power etc., of vessels for higher grades of certificate of competency.

Most European countries like the Netherlands, West Germany, Norway, Denmark, Sweden have transferred their certificate of competency exams to approved maritime training institutions. Recently the UK Minister of Shipping has accepted and approved that exams under the new system of meeting the STCW 78 Convention be transferred to marine colleges and effective as from 1988.
12.3 Role of the Marine Department.

Maritime training, Examinations/ Certification of Seafarers, and Manning of Ships are three vital and inseparable link in a chain which determines the standards of safety and efficiency of the operation of ships. The fact is, that, the weakest link in the chain shall determine the above standards, and all three links are of equal importance.

Training is a crucial factor in strengthening the maritime administration in developing countries. Thus, the role and function of the Marine Department is to ensure that these are carried out effectively.

For the SPUMS Code to be effectively and efficiently carried out it will be dependent upon the efficient administration machinery of the Marine Department to advise the Government in the adoption and its implementation.

Other regulation and conventions required for developing and operating the maritime programme of the country is also included within the Marine Department’s infrastructure in discharging the obligation of the Government under international conventions, which may be applicable.

The new proposed Marine Bill replaces all existing legislation in respect of maritime matters, particularly those parts of the Merchant Shipping Act 1894 of the United Kingdom, presently apply in Fiji is inadequate, outdated and is no longer appropriate.
It is therefore recommended that with proper National Maritime Legislation there could be developed an effective Maritime Safety Administration responsible for the control and development of:

1. Ship registration, inspection and survey;

2. Control of pollution;

3. A system for the examination and certification of seafarers;

4. A means of controlling and monitoring the levels of education, training, and experience required of seafarers as a condition of entry to the examinations for certificate of competency.

Therefore, the Marine Department should seriously consider proposing the establishment of its Maritime Safety Administration. Since this has been evolved by the International Maritime Organisation (IMO), it has been done by many developed countries.

The "Maritime Safety Administration" is expected to be the Specialized Executive arm of the Government irrespective of whether it is a developed or a developing country, as regards all its maritime affairs.

All Regulatory functions should then be transferred to this newly established administration body from the Fiji Marine Board, and for the Board to have a lesser functions particularly when technical maritime matters are
involved, and align it with developed and developing countries infrastructure in maintaining international standards.

Shipping is an international organisation, since the Marine Department is involved in shipping activities, it becomes an international organisation because of its conformity to international laws, conventions, and regulations.

The Department should consider manning this proposed administration with international qualified personnel to justify the SPUMS Code and equally to the school in maintaining international standards.

12.4 Legislative Provision.

At the time of writing this project, the new revised Marine Bill was due to be presented into Parliament sometime this year 1986.

This Bill establishes the framework for the merchant marine industry in Fiji. A framework to be filled in by regulations made by the Minister of Transport and Works in respect of ships, seaman and many other allied maritime matters.

The Bill replaces all existing legislation in respect of maritime matters, in particular those parts of the Merchant Shipping Act 1894 of the United Kingdom which presently apply in Fiji, and are no longer appropriate.
With the emergence of Fiji as an independent State with a substantial maritime trade role in the South Pacific, and with Fiji being a member of the South Pacific Forum, it is appropriate that Fiji’s maritime legislation should be revised to fall into line with modern maritime developments elsewhere, particularly developments in the South Pacific.

On the instruction of the South Pacific Forum Shipping Council, SPEC has, since 1979, been developing a South Pacific Uniform Maritime Standards (SPUMS) Code. This Code is based on advice and recommendation from Maritime Authorities of all Forum members, and the various international conferences under the auspices of the United Nations Agency— the International Maritime Organisation (IMO).

This Code was recently completed and will provide the main basis for the regulations which will be made by the Minister under the Bill once it has been passed and brought into operation. It is intended, therefore, that Fiji’s Maritime Legislation and the requirements specified in that legislation will be in harmony with that of other Pacific countries as they revise their own maritime legislation.
SUMMARY AND CONCLUSION.

The territory of the South Pacific Regional countries briefly mentioned in this project is vast. It consists of approximately 24 million square miles, or approximately 12 per cent of the surface area of the globe. Within the study area live less than one tenth of one per cent of the world’s population. The ratio of water to land area is approximately 100 : 1, and over 80 per cent of the land lies in one country, Papua New Guinea.

The South Pacific Region contains some of the world’s most isolated communities. The distance between the eastern and western extremities of the Republic of Kiribati is, for example roughly the same as the distance between Brisbane and Perth.

The recent history of the Pacific Region is a mixture of colonial expansionism, a major move to political independence and economic penetration. In a number of territories the residue of that history remains a dominant force, though change is continuous.

Substantial investment have been made in providing training for sea-going staffs. In some cases a surplus of trained ship’s crew has developed. The shortages of sea-going personnel is of officers, skilled engineers and crew qualified to foreign going standards.
The issues are:

- A clear need to provide manpower training to foreign going standards, and to provide training to a higher (officer) level than has been the case in recent years;

- Greater co-operation is needed between shipping lines and governments in training seaman.

- The poor in-house training of maritime administration and the school staffs in upgrading their academic and professional qualification including skill levels.

Government needs to co-ordinate its efforts in developing manpower skills relative to maritime transport operations. It appears that, during the last ten years, Government attention is focused elsewhere i.e. Civil Aviation, Tourism etc. with very little attention given to maritime transportation and its overall infrastructure.

The school of maritime studies is playing an important role of providing manpower training needed for the Fiji fleet and also for the pacific region. For this to be carried out effectively it needs government support and to ensure the school five development is implemented.

Staffs are the core elements of the school, every support is needed to ensure that adequate staffs are available with the required qualification and experienced necessary for the standards needed by the Code and in comparison with the standards of other developed countries.
The Maritime Administration should consider the establishment of a proper examination centre to comply with the Code and the Memorandum of Understanding.

The Ministry of Transport and Works and the Ministry of Education should work together more frequently to support the school in:

- the school’s five year development plans;
- the school’s five year local staffs development plan;
- implementation of the school’s proposed national training scheme;
- obtaining the radar and diesel engine simulators from the Norwegian Government;
- pursuing IMO assistance for staffing.

The Maritime Administration should take every necessary effort to see that the revised Marine Bill is implemented as soon as possible since it is the backbone of the whole maritime infrastructure.

The Ministry of Transport and Works and the Ministry of Education should make every effort to see that Fiji signs the STCW 78 Convention in order for the Fiji fleet may sail to any countries within the south pacific region and to any country throughout the world without, or with very little resistance.
1. Report - Advisory Committee on Uniform Maritime Standards Meeting:
   - SPEC (81) 1
   - SPEC (82) 2
   - SPEC (83) 3
   - SPEC (85) 10
   - SPEC (78) 21


4. Ports Authority of Fiji Handbook 1985


6. Examination Administration Vol. 1 & 2 - Prof. T. Balmer, WMU

7. Maritime Administration Vol. 1 Prof. Vanchiswar, WMU

8. Educational and Administration Notes - Capt. D Waters, Principal, Australia Maritime College.


10. Maritime Personnel and Administration - Capt. G. Singh visiting Professor, WMU.

12. IMO Maritime Training Programme - Capt. E Moat & Mr G R. Hodge

TABLE A

DECK OFFICER COURSE STRUCTURE

EXISTING

G1M

2 Years sea time

G2M

1 Year sea time

G3M

1 Year sea time

CADET SCHEME

DA5

Deck Officer

G4M

1 Year sea time

G4MR

1 Year sea time

G5M

1 Year sea time

36 Months at sea

DA3

DA1

Pre-Sea

3 months

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EXISTING

**DECK CADET TRAINING STRUCTURE**

1 YEAR SEA TIME

DA1 Pre - Sea 3 months

DA2 1 YEAR SEA TIME

DA3

DA4 1 YEAR SEA TIME

DA5

G4M

DECK OFFICER

G4M

COMMAND ORAL
TABLE 10

MARINE ENGINEERING COURSE STRUCTURE

EXISTING

GIE

18 months at sea

G2E

C3E

5 Years Apprentice Fitter & Turner

G4E

12 months at sea

G5E

12 months at sea

36 months at sea

CAUCET SCHEME

EC 5

EC 3

EC 1

APPRENTICESHIP SCHEME
CADET ENGINEER TRAINING STRUCTURE

EXISTING

EC 5 — 16 months at sea — G3E

EC 4 — 6 months at sea — G4E

EC 3 ——

EC 2 — 6 months at sea — G5E

EC 1 ——

Pre - Sea 3 months
APPENDIX 1

CHAPTER 1.

PART 1. INTERPRETATION

Section 1. Definitions

In the Code, unless the contrary intention appears:

'approved' means approved by an Authority;

'Authority' means the marine authority of the Government of a member country.

'Certificate of Competency' means a certificate issued to a seaman which entitles the seaman to serve in a vessel in the designation or grade stated in that certificate.

'Note: 'Seaman' includes masters and officers - see definition below.

'Code' means the South Pacific Uniform Maritime Standards Code;

'Collision Convention' means the Convention on the International Regulations for Preventing Collisions at Sea 1972, together with the International Regulations for Preventing Collisions at Sea 1972, constituted by the rules and other annexes attached to that Convention, as corrected by Provisions for the Prevention of Collisions at Sea 1973, as affected by any amendment made under Article VI of that Convention;

'Commercial vessel' means a vessel which is not used solely for pleasure or recreation and the use of which is made, allowed or authorised in the course of any business or in connection with any commercial transaction;

'crew' means those persons employed on board and in the business of a vessel, but does not include a pilot or a person temporarily on board the vessel while the vessel is at a port;

'dangerous goods' means any goods classified and dealt with as dangerous goods in the International Maritime Dangerous Goods Code published by the International Maritime Organisation, London, in 1965 as amended from time to time;

'equipment' in relation to a vessel, includes everything or article belonging or used in connection with, or necessary for the navigation, safety and working of, the vessel;

'examiner' means a person or institution appointed by an Authority to conduct examinations for Certificates of Competency;

'existing vessel' means a vessel that is not a new vessel.

'fishing vessel' means a vessel used or intended to be used for catching fish, whales, seals, walrus or other living resources of the sea but excluding any vessel

(a) engaged in harvesting or transporting of algae or aquatic plants; or

(b) that is primarily a carrier or mother vessel;

'gross tonnage' in relation to a vessel having alternative gross tonnages, shall be taken to be a larger of those tonnages;

'length' in relation to a vessel means:

(a) the length shown in the vessel's certificate of registry or tonnage certificate; or

(b) in the case of a vessel which does not possess either of these certificates or where the length is not shown on either certificate, the length of the vessel as determined by an Authority;

'load line' means a line marked on a vessel indicating the depth to which the vessel may safely be loaded;

'Load Line Convention' means the International Convention on Load Lines 1966 as affected by any amendment made to that Convention;

'Load Line Convention Ship' means a vessel that is:

(a) of a kind to which the Load Line Convention applies; and

(b) registered in a country the Government of which is a party to the Load Line Convention;
'master' in relation to a vessel means the person having lawful command or charge of the vessel but does not include a pilot.

'member country' means a country the Government of which undertakes to conform to the requirements of the Code.

'Near Continental Trade' means trade or operations of a vessel in the vicinity of a member country as defined by that country.

'new vessel' means a vessel:

(a) the keel of which was laid or which was at a similar stage of construction; or

(b) that has been substantially altered or reconstructed, on or after the date set by each member country for the coming into force of the applicable provision of national legislation in respect of the vessel.

Note: This definition assumes that the operative dates of "coming into force" of the provisions of the Code will be set individually by member countries by their own national legislation and not by the Code itself.

'offshore vessel' means a vessel that is:

(a) engaged in the exploration or exploitation of the internal waters and marine space within the jurisdiction of a member country as prescribed in the laws of that country; and

(b) operating to or from, or is based at a port or place in that country.

'Pacific Region Trade' means trade or operations of a vessel within the area demarcated by Latitudes 15 Degrees North to 47 Degrees South and Longitudes 130 Degrees East to 130 Degrees West.

'passenger' means a person carried on board a vessel with the knowledge or consent of the owner or master of the vessel but does not include:

(a) a person engaged in any capacity on board the vessel in the business of the vessel; or

(b) a child under the age of one year.

'passenger vessel' means a vessel which is:

(a) engaged in an international voyage; and

(b) carrying more than 12 passengers.

'pilot' in relation to a ship means any person not belonging to the ship who has the lawful command of the ship;

'pleasure craft' means a vessel that is:

(a) exclusively used for pleasure; and

(b) not used for hire or reward or any commercial purpose;

'prescribed' means prescribed in the Code or in national legislation of a member country;


'radio installation' means a radiotelegraphy or radiotelephony installation but does not include a radio navigational aid;

'safety certificate' means a certificate issued in respect of the safety of a vessel by an Authority or by the marine administration of a country or by a person authorised on behalf of the Authority or administration;

'the Safety Convention' means the International Convention for the Safety of Life at Sea 1974, as affected by any amendment made under Article VIII of that Convention and, as affected by the Protocol of 1978 relating to the Safety Convention;

'Safety Convention Ship' means a vessel that is:

(a) of a kind to which the Safety Convention applies; and

(b) registered in a country the Government of which is a party to the Safety Convention;
"Pilot" in relation to a vessel means a person other than

(a) a pilot of
(b) a person temporarily employed on board a vessel while the vessel is at a port,

being a person who is engaged or employed by a vessel and in the business of the vessel.

"Ship" means a vessel which has its own means of propulsion but does not include a vessel ordinarily propelled by oars.

"STCW Convention" means the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as affected by any amendment made under Article XII of that Convention.

"Surveyor" means a surveyor appointed by an Authority to carry out surveys and inspections of ships.

"Tanker" means a vessel constructed and used for the carriage in bulk of petroleum and petroleum products, liquid chemicals or liquefied gas.


"Tonnage Measurement Convention Ship" means a vessel that is

(a) of a kind to which the Tonnage Measurement Convention applies; and
(b) registered in a country, the Government of which is a party to the Tonnage Measurement Convention.

"Traditional Build" in relation to a vessel means a vessel built of traditional materials to a traditional local design.

"Unlimited Trade" means trade or operations of a vessel which is not confined to Near Coastal Trade or Pacific Region Trade.

"Vessel" includes

every description of vessel used, or capable of being used, in navigation by water but does not include:

(i) a vessel belonging to the defence forces of any country; or
(ii) a vessel employed solely in navigation on lagoons, lakes, rivers and inland waters.

PART 2. APPLICATION OF CODE

Section 1. Application to Commercial Vessels

Subject to Section 2, the provisions of the Code shall, unless the context otherwise requires, apply to:

(a) a commercial vessel registered in a member country, irrespective of the trade or operation in which the vessel is engaged; and
(b) a commercial vessel within the jurisdiction of a member country, including:
   (i) a vessel authorised to engage in the domestic trade of a member country; and
   (ii) an offshore vessel,
   irrespective of the flag or country of registry of the vessel.

Section 2. Exclusions

The provisions of the Code shall, unless the context otherwise requires, not apply to:

(a) a vessel of less than 15 metres in length;
(b) a pleasure craft;
(c) a vessel of traditional build;
(d) a vessel permanently employed in harbours or smooth water operations, and
(e) a fishing vessel.

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PART 3. CLASSIFICATION OF VESSELS AND AREAS

Section 1. Categories of Vessels

In the Code, unless the context otherwise requires, a vessel shall be classed according to her length or gross tonnage as required by the particular Part or Section of the Code concerned. The length or gross tonnage shall be that shown in the vessel's Certificate of Registry or Tonnage Certificate or as determined by the Authority of her country of registry. In the case of a small vessel that has not been measured for tonnage, the following length values may be considered as equivalent tonnage parameters for the purposes of the Code:

(a) 35 metres length considered equivalent to 200 gross tonnage;
(b) 45 metres length considered equivalent to 500 gross tonnage;
(c) 60 metres length considered equivalent to 1000 gross tonnage;
(d) 80 metres length considered equivalent to 1600 gross tonnage.

Section 2. Trade and Operational Areas

In the Code, unless the context otherwise requires, the area of trading or operation of a vessel shall be classed as:

(a) Near Coastal Trade; or
(b) Pacific Region Trade; or
(c) Unlimited Trade.

PART 4. INTERNATIONAL MARITIME CONVENTIONS

Section 1. Compliance with Standards of Conventions

The Standards laid down in the following international maritime conventions will be maintained by member countries with respect to vessels registered in those countries or subject to their jurisdiction:

(a) the Safety Convention;
(b) the Load Line Convention;
(c) the Collisions Convention;
(d) the Tonnage Measurement Convention; and
(e) the STCW Convention.

An outline of the requirements of each Convention and the categories of vessels to which they apply is shown in the following paragraphs. Further details are given in the chapters of the Code dealing with the technical subjects covered by the Conventions.

Section 2. The Safety Convention

2.1 Requirements: This Convention deals with the safety of ships, including the carrying out of surveys and issue of safety certificates, with technical provisions covering construction, equipment and radio as well as the carriage of certain hazardous and dangerous cargoes. The annex to the Convention consists of the following chapters containing technical regulations on these matters:

Chapter I General Provisions

Chapter II-1 Construction - Subdivision and Stability, Machinery and Electrical Installations
2.2 Application: In broad terms, under Regulations 1 and 3 of Chapter I, the requirements of this Convention apply to all ships engaged on international voyages other than:

(a) ships of war and troopships;
(b) cargo ships of less than 500 gross tonnage;
(c) ships not propelled by mechanical means;
(d) wooden ships of traditional build;
(e) pleasure craft; and
(f) fishing vessels.

There are however certain exceptions to the general application stated above, notably:

(i) certain requirements of Chapter IV (Radiotelegraphy and Radiotelephony) apply to vessels of 300 gross tonnage and upwards, and
(ii) certain requirements of Chapter V (Safety of Navigation) apply to all vessels on all voyages.

Reference should be made to the appropriate Part of Chapter 3 of the Code to ensure correct application of the Convention with respect to the technical requirements concerned. It should be noted that, as defined in Part I of this chapter, the term "Safety Convention Ship" is used throughout the Code to denote a ship to which the Safety Convention applies.

Section 3. The Load Line Convention

3.1 Requirements: This Convention covers the method of computation of freeboards, the conditions of assignment of loadlines, loadline survey procedures, marking of loadlines and issue of international loadline certificates.

3.2 Application: In general terms, under Articles 4 and 5, the requirements of this Convention apply to all ships engaged on international voyages other than:

(a) ships of war and troopships;
(b) new ships of less than 24 metres in length;
(c) existing ships of less than 150 gross tonnage;
(d) pleasure craft; and
(e) fishing vessels.

Further reference should be made to Part 4 of Chapter 3 of the Code with respect to application of this Convention. It should be noted that as defined in Part I of this Chapter, the term "Load Line Convention Ship" is used throughout the Code to denote a ship to which the Load Line Convention applies.

Section 4. The Collision Convention

4.1 Requirements: This Convention contains the steering and sailing rules, i.e. the rule of the road, for vessels, the lights, shapes, sound and light signals to be carried and shown by vessels and the positioning and technical details of these lights, shapes and sound signals.

4.2 Application: The International Regulations for Preventing Collisions at Sea, contained in this Convention, apply to "all vessels upon the high seas and in all waters connected therewith navigable by seagoing vessels".

The International Regulations are detailed in full in Part 10 of Chapter 3 of the Code.

Section 5. The Tonnage Measurement Convention

5.1 Requirements: This Convention provides the system of measurement to be used to determine the gross and net tonnages of vessels and the form of international tonnage certificate to be issued.
5.2 Application: In very broad terms, the Convention applies to ships of 24 metres length or more which are

(a) new ships, or
(b) existing ships, where the owner chooses to change to the method of measurement prescribed by the Convention, or
(c) existing ships, after period of 12 years has elapsed since the ascension by the country of registry to the Convention, or
(d) existing ships which have undergone structural modifications resulting in a significant change to their gross tonnage.

Further reference should be made to the Convention itself and to Part I of Chapter 4 of the Code regarding the application of this Convention. It should be noted that, as defined in Part I of this Chapter, the term "Tonnage Measurement Convention Ship" is used throughout the Code to denote a ship to which the Tonnage Measurement Convention applies.

Section 6 The STCW Convention

6.1 Requirements: This Convention prescribes the minimum requirements for certification of masters, deck officers and marine engineers, radio officers and radiotelephone operators, special requirements for personnel in tankers and minimum requirements for the issue of Certificates of Proficiency in Survival Craft.

6.2 Application: In general terms, under Article III, the Convention applies to seafarers on all ships other than

(a) warships and naval auxiliaries,
(b) fishing vessels,
(c) pleasure craft; and
(d) wooden ships of traditional build.

Further reference should be made to Chapter 2 of the Code with respect to the application of this Convention.

Note: References to particular Articles, Chapters or Regulations in the Conventions listed above refer to the Conventions as amended up to the date of drafting of the Code (June 1986).

These references may need to be amended to comply with subsequent amendments to Conventions after that date. (This note applies particularly to the Safety Convention which is normally subject to annual amendments.)
Section 3: Requirements for Minimum Age and Sea Service

GRADE 1 (MASTER)

Minimum Age: Not prescribed. Prerequisite Certificate: Grade 1 (Mate)

Required Sea Service

Either (a) 36 months service as watch keeping officer holding Certificate of Competency not lower than Grade 4 (Mate)

or (b) 12 months service as Chief Mate plus 12 months service as watch keeping officer holding Certificate of Competency not lower than Grade 4 (Mate)

In either case, (a) or (b), not less than 12 months of the service shall be performed outside the Near Coastal Trade area.

Remission of watch keeping service may be allowed by the Authority for attendance at approved training courses as prescribed in Section 4 (para 4.6) of this Part.

GRADE 2 (MASTER)

Minimum Age: Not prescribed. Prerequisite Certificate: Grade 2 (Mate)

Required Sea Service

Either (a) 36 months service as watch keeping officer holding Certificate of Competency not lower than Grade 4 (Mate)

or (b) 12 months service as Chief Mate plus 12 months service as watch keeping officer holding Certificate of Competency not lower than Grade 4 (Mate)

In either case, (a) or (b), not less than 6 months of the service shall be performed outside the Near Coastal Trade area.

Remission of watch keeping service may be allowed by the Authority for attendance at approved training courses as prescribed in Section 4 (para 4.6) of this Part.

GRADE 3 (MASTER)

Minimum Age: Not prescribed. Prerequisite Certificate: Grade 3 (Mate)

Required Sea Service

Either (a) 36 months service as watch keeping officer holding Certificate of Competency not lower than Grade 4 (Mate)

or (b) 12 months service as Chief Mate plus 12 months service as watch keeping officer holding Certificate of Competency not lower than Grade 4 (Mate)

In either case, (a) or (b), not less than 6 months of the service shall be performed outside the Near Coastal Trade area.

Remission of watch keeping service may be allowed by the Authority for attendance at approved training courses as prescribed in Section 4 (para 4.6) of this Part.

GRADE 4 (MASTER)

Minimum Age: Not prescribed. Prerequisite Certificate: Grade 4 (Mate)

Required Sea Service

Either (a) 36 months service as watch keeping officer holding Certificate of Competency not lower than Grade 4 (Mate)

or (b) 12 months service as Chief Mate plus 12 months service as watch keeping officer holding Certificate of Competency not lower than Grade 4 (Mate)

In either case, (a) or (b), the service may be performed in or outside the Near Coastal Trade area.

Remission of watch keeping service may be allowed by the Authority for attendance at approved training courses as prescribed in Section 4 (para 4.6) of this Part.
GRADE 1 (MATE)

Minimum Age: Not prescribed. Prerequisite Certificate: Grade 3 (Mate)

Required Sea Service

18 months service as watchkeeping officer holding Certificate of Competency not lower than Grade 4 (Mate). Not less than 6 months of the service shall be performed outside the Near Coastal Trade area.

Remission of watchkeeping service may be allowed by the Authority for attendance at approved training courses as prescribed in Section 4 (para 4.6) of this Part.

GRADE 2 (MATE)

Minimum Age: Not prescribed. Prerequisite Certificate: Grade 3 (Mate)

Required Sea Service

18 months service as watchkeeping officer holding Certificate of Competency not lower than Grade 4 (Mate). Not less than 3 months of the service shall be performed outside the Near Coastal Trade area.

Remission of watchkeeping service may be allowed by the Authority for attendance at approved training courses as prescribed in Section 4 (para 4.6) of this Part.

GRADE 3 (MATE)

Minimum Age: 18 years. Prerequisite Certificate: Nil.

Required Sea Service

36 months approved sea service in deck department, including at least 6 months bridge watchkeeping duties as lookout 2nd helmsman under supervision of qualified officer. Not less than 3 months of the service shall be performed outside the Near Coastal Trade area.

Remission of deck department service may be allowed by the Authority for attendance at approved training courses as prescribed in Section 4 (para 4.6) of this Part.

GRADE 4 (MATE)

Minimum Age: 20 years. Prerequisite Certificate: Nil.

Required Sea Service

36 months approved sea service in deck department, including at least 6 months bridge watchkeeping duties as lookout 2nd helmsman under supervision of qualified officer. The service may be performed either in or outside the Near Coastal Trade area.

Remission of deck department service may be allowed by the Authority for attendance at approved training courses as prescribed in Section 4 (para 4.6) of this Part.

GRADE 5 (MATE)

Minimum Age: 20 years. Prerequisite Certificate: Grade 5 (Mate)

Required Service

12 months service as watchkeeping officer holding Certificate of Competency not lower than Grade 5 (Mate). The service may be performed either in or outside the Near Coastal Trade area.

GRADE 6 (MATE)

Minimum Age: 18 years. Prerequisite Certificate: Nil.

Required Sea Service

Either (a) 36 months approved sea service in deck department;

or (b) 34 months approved training course including 12 months sea service.

All sea service may be performed either in or outside the Near Coastal Trade area.
Section 4. General Requirements for Examination Candidates

4.1 Applications for examinations for a Certificate of Competency shall contain evidence of compliance with the requirements of the Code in respect of age, sea service, approved training courses, certificate of competency held and all other prerequisites. Applications should normally be submitted at least one month before a scheduled examination but examiners should permit lesser periods of notice, where this is possible, in cases of need.

4.2 Testimonials of the applicant's character including sobriety, experience, ability and conduct should be required by the examiner for the last twelve months of sea service preceding the date of application.

4.3 Medical and Physical Requirements

(a) The examiner shall require satisfactory evidence as to the candidates' medical fitness, particularly with regard to eyesight and hearing, before proceeding to examination and every candidate shall pass a sight test as prescribed in Schedule 4 of this Part.

A pass in a sight test shall be valid for twelve months from the date of taking the test.

(b) If, despite such evidence, an examiner finds in the course of an examination that a candidate is afflicted with deafness, with an impediment in speech or with some other physical or mental infirmity, and upon further investigation is satisfied that the degree of infirmity is such as to render the candidate incapable of discharging adequately the ordinary sea-going duties of the holder of a Certificate of Competency, he shall allow the candidate to complete the examination. Every such case shall be reported to the Authority responsible for the issue on the Certificate of Competency and, if the candidate is the holder of an existing certificate, the Certificate shall be forwarded with the examiner's report.

(c) If the candidate subsequently produces a medical certificate to the effect that his hearing, speech or physical or mental condition has improved or is normal, the Authority shall consider the candidate for re-examination.

4.4 Language. Examinations shall be conducted in English (or French), except for Grade 5 Certificate of Competency, mate and master, which may be conducted in any of the accepted languages of the country in which the examination is being held. For all other grades of certificate, the candidates shall prove to the satisfaction of the examiner that they can speak, read and write English (or French as the case may be), sufficiently well to perform the duties required of them.

4.5 Insufficient Service

4.5.1 If, after a candidate has passed the examination, it is discovered that his sea service is insufficient to entitle him to receive a certificate of the grade for which he has passed, the certificate shall not be issued. If, however, the examiner is satisfied that the error in the calculation of the candidate's service did not occur through any fault or wilful misrepresentation on his part, the Certificate shall be issued when the candidate has made up the deficiency in service.

4.5.2 Where a candidate is deficient in sea service by a period of less than three months, he may be permitted to sit for the examination in cases where, in the opinion of the examiner, this is justified in view of the infrequency of examinations for that particular grade of certificate. The certificate shall not be issued until the deficiency in sea service has been rectified.

4.6 Remission of Service

4.6.1 Remissions of Watchkeeping Service may be allowed as shown below for candidates who attend approved training courses in an establishment prescribed in Schedule 5 of this Part or other approved establishment, for the periods set down in the Schedule.

<table>
<thead>
<tr>
<th>Candidate Grade</th>
<th>Remission allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1 (Mate)</td>
<td>Up to 12 months of total watchkeeping service required</td>
</tr>
<tr>
<td>Grade 2 (Mate)</td>
<td>Up to 12 months of total watchkeeping service required</td>
</tr>
<tr>
<td>Grade 3 (Mate)</td>
<td>Up to 12 months of total watchkeeping service required</td>
</tr>
<tr>
<td>Grade 4 (Mate)</td>
<td>Up to 12 months of total watchkeeping service required</td>
</tr>
<tr>
<td>Grade 1 (Mate)</td>
<td>Up to 6 months of total watchkeeping service required</td>
</tr>
<tr>
<td>Grade 2 (Mate)</td>
<td>Up to 6 months of total watchkeeping service required</td>
</tr>
</tbody>
</table>
In all cases where a minimum period of watchkeeping service outside the Near Coastal Trade area is required under Section 3 of this Part, that period of service shall be performed in full without remission.

4.6.2 Remissions of deck department service may be allowed as shown below for candidates who attend approved training courses in an establishment prescribed in Schedule 5 of this Part or other approved establishment, for the periods set down in the Schedule:

**Candidate for:** Remission allowed:

- **Grade 1 (Master)**: Up to 12 months of total watchkeeping service required
- **Grade 2 (Master)**: Up to 12 months of total watchkeeping service required
- **Grade 3 (Master)**: Up to 12 months of total watchkeeping service required
- **Grade 4 (Master)**: Up to 12 months of total watchkeeping service required
- **Grade 5 (Master)**: No remission of watchkeeping service allowed.

In all cases where a minimum period of watchkeeping service outside the Near Coastal Trade area is required under Section 3 of this Part, that period of service shall be performed in full without remission.

4.6.2 Remissions of deck department service may be allowed as shown below for candidates who attend approved training courses in an establishment prescribed in Schedule 5 of this Part or other approved establishment, for the periods set down in the Schedule:

**Candidate for:** Remission allowed:

- **Grade 1 (Mate)**: Up to 6 months of total watchkeeping service required
- **Grade 2 (Mate)**: Up to 6 months of total watchkeeping service required
- **Grade 3 (Mate)**: Up to 6 months of total watchkeeping service required
- **Grade 4 (Mate)**: Up to 6 months of total watchkeeping service required
- **Grade 5 (Mate)**: No remission of watchkeeping service allowed.

The minimum period of 3 months service outside the Near Coastal Trade area required under Section 3 of this Part in the case of a Grade 3 (Mate) Certificate shall be performed in full without remission.

**Note:** The above periods of remission align with STCW requirements except that the period allowed for remission deck department service in the case of Grade 3 (Mate) and Grade 4 (Mate) has been reduced from 24 months to 18 months.

4.7 Service in Non-Commercial Vessels shall be assessed on its merits having regard to the principals expressed in this code.

4.8 Conduct of Examinations. The requirements to be observed in the conduct of examinations are prescribed in Schedule 3. Examination and training centres are listed in Schedule 6 of this Part.

Section 5. General Outline of Requirements for Examinations and Supplementary Courses

**Note:** For details of examination syllabuses and supplementary courses, see Schedules 1 and 2.

5.1 Requirements for Grade 1 (Mate) and (Master)

- **Grade 1 (Mate)**
  - Pre-requisite Certificate - Grade 3 (Mate)

Examinations
<table>
<thead>
<tr>
<th>TITLE</th>
<th>STCW STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1    Business and Law</td>
<td>Grade 1 (Mate) Syllabus considered adequate for compliance with STCW - Reg 11/2 (Chief Mate of ship of 1000 GT or more in any trade).</td>
</tr>
<tr>
<td>2    Navigation</td>
<td></td>
</tr>
<tr>
<td>3    Ship Construction and Stability</td>
<td></td>
</tr>
<tr>
<td>4    Engineering and Control Systems</td>
<td></td>
</tr>
<tr>
<td>5    Navigational Aids and Instruments</td>
<td></td>
</tr>
<tr>
<td>6    Oral and Practical</td>
<td></td>
</tr>
<tr>
<td>7    Meteorology, Current and Routing</td>
<td></td>
</tr>
<tr>
<td>8    Electrotechnology</td>
<td></td>
</tr>
<tr>
<td>9    Signals</td>
<td></td>
</tr>
</tbody>
</table>

* Candidates who are already holders of a Grade 2 (Mate) Certificate or equivalent will normally be exempted from all of these examinations.

Supplementary Courses/Certificates
1. First Aid
2. Restricted Radiotelephony
3. Survival (Full)
4. Firefighting
5. Radar Observer (Full)
6. Electronic Navigation Aids (Operation)

Grade 1 (Master)
Pre-Requisite certificate - Grade 1 (Mate)
Examinations: Oral and practical (Masters Standard) - Complies with requirements of STCW Regulation 11/2 applicable to Master of vessel of 1600 gross tonnage or more in any trade, (Unlimited, Pacific Region or Near Coastal)  
(Note that Masters' oral examination also includes questions based on Grade 1, Business and Law paper).

Supplementary Courses/Certificates
As per Grade 1 (Mate) plus -
7. Radar Simulator
8. Ship Captain's Medical

Requirements for Grade 2 (Mate) and (Master)

Grade 2 (Mate)
Pre-Requisite Certificate - Grade 3 (Mate)
Examinations

-
<table>
<thead>
<tr>
<th>TITLE</th>
<th>STCW STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Navigation and Chartwork</td>
<td>Grade 2 (Mate) syllabus considered adequate for compliance with STCW - Regulation 2 (Chief Mate) for ship less than 1600 GT in Unlimited Trade or any tonnage in Pacific region trade.</td>
</tr>
<tr>
<td>2. Meteorology, currents and Routing</td>
<td></td>
</tr>
<tr>
<td>3. Ship construction and stability</td>
<td></td>
</tr>
<tr>
<td>4. Electrotechnology</td>
<td></td>
</tr>
<tr>
<td>5. Compasses and Navigational Aids</td>
<td></td>
</tr>
<tr>
<td>6. Shipmaster’s Business</td>
<td></td>
</tr>
<tr>
<td>7. Oral and Practical</td>
<td></td>
</tr>
<tr>
<td>8. Signals</td>
<td></td>
</tr>
</tbody>
</table>

Supplementary Courses/Certificates

1. First Aid
2. Restricted Radiotelephony
3. Survival (Full)
4. Firefighting
5. Radar Observer (Full)
6. Electronic Navigation Aids (Operation)

Grade 2 (Master)

Pre-requisite Certificate Grade 2 (Mate)

Examinations: Oral and Practical (Master’s Standard) - complies with requirements of STCW Regulation 11/2 applicable to master of vessel of less than 1600 gross tonnage in Unlimited trade or any tonnage in Pacific region trade.

(Note that Masters’ oral examination also includes questions based on Grade 2 Shipmasters Business Paper).

Supplementary Courses/Certificates

As for Grade 2 (Mate) plus

7. Radar Simulator
8. Ship Captain’s Medical

GRADING 3 (Mate)

Pre-requisite Certificate Nil

Examinations
<table>
<thead>
<tr>
<th>TITLE</th>
<th>STCW STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Navigation</td>
<td>Grade 3 (Mate) syllabus considered adequate for compliance with STCW - Regulation 11/2 (Chief Mate less than 1600 GT) within Pacific region and Near Coastal Trades and Regulation 11/4 (Watcheship officer over 300 GT) for all trades</td>
</tr>
<tr>
<td>2. Chartwork and Piloting</td>
<td>(Assumed that STCW requirements re Electronic navigational aids will be covered by ENA (operations) course).</td>
</tr>
<tr>
<td>3. Ship Construction and Stability</td>
<td></td>
</tr>
<tr>
<td>4. Ship Operation</td>
<td></td>
</tr>
<tr>
<td>5. Meteorology</td>
<td></td>
</tr>
<tr>
<td>6. Principles of Navigation</td>
<td></td>
</tr>
<tr>
<td>7. Oral and Practical</td>
<td></td>
</tr>
<tr>
<td>8. Signals</td>
<td></td>
</tr>
</tbody>
</table>

Supplementary Courses/Certificates

1. First Aid
2. Restricted Radiotelephony
3. Survival (Full)
4. Firefighting
5. Radar Observer (Full)
6. Electronic Navigation Aids (Operation)

Grade 3 (Master)

Pre-requisite Certificate: Grade 3 (Mate)

Examinations: Oral and Practical (Master Standard) - complies with requirements of STCW Regulation 11/2, applicable to master of vessel of less than 1600 Gross Tonnage in Pacific Region and Near Coastal Trades.

Supplementary Courses/Certificates

As for Grade 3 (Mate)

5.4 Requirements for Grade 4 (Mate) and (Master)

GRADE 4 (Mate)

Pre-requisite Certificate - Nil

Examinations
<table>
<thead>
<tr>
<th>TITLE</th>
<th>STCW STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Ship Knowledge</td>
<td>Grade 4 (Mate) syllabus considered adequate compliance with STCW Regulations 11/2 (Chief Mate: 1 than 1600 GT) and 11/4 (watchkeeping officer over 200 GT)</td>
</tr>
<tr>
<td>2. Chartwork and Piloting</td>
<td>(Note: Grade 4 (Mate) limited to Pacific Region and A Coastal Trade)</td>
</tr>
<tr>
<td>3. Practical Navigation</td>
<td></td>
</tr>
<tr>
<td>4. Meteorology</td>
<td></td>
</tr>
<tr>
<td>5. Oral and Practical</td>
<td></td>
</tr>
<tr>
<td>6. Signals</td>
<td></td>
</tr>
</tbody>
</table>

Supplementary Courses/Certificates

1. First Aid
2. Restricted Radiotelephony
3. Survival (Full)
4. Firefighting
5. Radar Observer (Limited)

Grade 4 (Mate)

Pre-requisite Certificate Grade 4 (Mate)

Examination: Oral and Practical (Masters Standard) - complies with requirements of STCW. Regulation applicable to master of small vessel, (Less than 1000 gross tonnage) in Near Coastal Trade.

Supplementary Courses/Certificates

As for Grade 4 (Mate)

5.3 Requirements for Grade 5 (Mate) and (Master)

GRADE 5 (MATE)

Pre-requisite Certificate - NB

Examinations

<table>
<thead>
<tr>
<th>TITLE</th>
<th>STCW STANDARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chartwork and Practical Navigation</td>
<td>Grade 5 (Mate) syllabus considered to comply with requirements of STCW Regulation 11/3 (Mate/Mate keeping officer of ship less than 200 GT in Near Coastal Trade).</td>
</tr>
<tr>
<td>2. General Ship Knowledge</td>
<td></td>
</tr>
<tr>
<td>3. Oral and Practical</td>
<td></td>
</tr>
<tr>
<td>4. Meteorology (Oral)</td>
<td></td>
</tr>
</tbody>
</table>

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### Supplementary Courses/Certificates

1. First Aid
2. Restricted Radiotelephony
3. Survival (Limited)
4. Firefighting
5. Radiotelephone Operator (Limited)

**Grade 3 (Master)**

*Pre-requisite Certificate Grade 3 (Mate)*

Examination: (oral and practical) (Masters Standard) - complex with requirements of NTCW Regulations 113 for master of small vessel of less than 200 gross tonnage in near coastal trade

### Supplementary Courses/Certificates

As for Grade 3 (Mate)

### Section 6. Marking and Assessment of Examinations

#### 6.1 Prescribed Marking

<table>
<thead>
<tr>
<th>GRADE 1</th>
<th>Time</th>
<th>TOTAL MARKS</th>
<th>% PAs</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Business and Law</td>
<td>3 hrs</td>
<td>200</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>2. Navigation</td>
<td>2½ hrs</td>
<td>200</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>3. Ship Construction and Stability</td>
<td>3 hrs</td>
<td>200</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>4. Engineering and Control Systems</td>
<td>2½ hrs</td>
<td>200</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>5. Nautical Aids and Instruments</td>
<td>3 hrs</td>
<td>200</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>6. Oral and Practical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. *Meteorology, Currents and Routing</td>
<td>2 hrs</td>
<td>150</td>
<td>50%</td>
<td><em>Holder of Grade 2 (Mate) Certificate exempt</em></td>
</tr>
<tr>
<td>8. *Electrotechnology</td>
<td>2 hrs</td>
<td>150</td>
<td>50%</td>
<td><em>Holder of Grade 2 (Mate) Certificate exempt</em></td>
</tr>
<tr>
<td>9. *Signals</td>
<td></td>
<td></td>
<td></td>
<td><em>Holder of Grade 2 (Mate) Certificate exempt</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GRADE 2</th>
<th>Time</th>
<th>TOTAL MARKS</th>
<th>% PAs</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Navigation and Chart-work</td>
<td>3 hrs</td>
<td>200</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>2. Meteorology, Currents and Routing</td>
<td>2 hrs</td>
<td>150</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>3. Ship Construction and Stability</td>
<td>3 hrs</td>
<td>200</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>4. Electrotechnology</td>
<td>2 hrs</td>
<td>150</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>5. Compasses and Nautical Aids</td>
<td>3 hrs</td>
<td>150</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>6. Shipmasters' Business</td>
<td>2 hrs</td>
<td>150</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>7. Oral and Practical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Signals</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| | | 100% plus 30% | Aggregate 60% |
| | | | |

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163
<table>
<thead>
<tr>
<th>GRADE 3</th>
<th>Time</th>
<th>TOTAL MARKS</th>
<th>% PANS</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Navigation</td>
<td>3 hrs</td>
<td>200</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>2. Chartwork and Pilotage</td>
<td>2 hrs</td>
<td>150</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>3. Ship Construction and Stability</td>
<td>3 hrs</td>
<td>200</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>4. Ship Operation</td>
<td>2 hrs</td>
<td>150</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>5. Meteorology</td>
<td>2 hrs</td>
<td>150</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>6. Principles of Navigation</td>
<td>3 hrs</td>
<td>150</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>7. Oral and Practical</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Male and Master level</td>
</tr>
<tr>
<td>8. Signals</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1000</td>
<td>Aggregate GPA</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>GRADE 4</th>
<th>Time</th>
<th>TOTAL MARKS</th>
<th>% PANS</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Ship Knowledge</td>
<td>2 hrs</td>
<td>200</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>2. Chartwork and Pilotage</td>
<td>2 hrs</td>
<td>150</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>3. Practical Navigation</td>
<td>1½ hrs</td>
<td>100</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>4. Meteorology</td>
<td>2 hrs</td>
<td>150</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>5. Oral and Practical</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Male and Master level</td>
</tr>
<tr>
<td>6. Signals</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>600</td>
<td>Aggregate GPA</td>
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<table>
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<tr>
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<th>Time</th>
<th>TOTAL MARKS</th>
<th>% PANS</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Chartwork and Practical Navigation</td>
<td>3 hrs</td>
<td>200</td>
<td>70%</td>
<td></td>
</tr>
<tr>
<td>2. General Ship Knowledge</td>
<td>2 hrs</td>
<td>150</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>3. Oral and Practical</td>
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<td>Male and Master level</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>350</td>
<td>Aggregate GPA</td>
</tr>
</tbody>
</table>
Section 7.

Revalidation of Certificates of Competency
(Masters and Chief Officers)

7.1 General requirements for revalidation of certificates in accordance with the requirements of the SICW Convention are contained in Section 2 of Part 5 of this Chapter.

7.2 The demonstration of professional competence by a seafarer who seeks revalidation of his certificate in compliance with the requirements of Regulation 11/3 of the SICW Convention may be carried out by any of the following methods:

(a) approved seagoing service of at least twelve months during the preceding five years,

(b) performance of functions relating to the duties required by the grade of certificate which are considered equivalent to the seagoing service required in paragraph (a).

Examples of such service are positions in shore employment such as Marine Superintendent, Pilot or Surveyor. In cases where Authorities are in doubt as to the equivalence of such functions, the service requirement may be supplemented by one of the methods prescribed in paragraph (c): or
SECTION 3. REQUIREMENTS FOR CERTIFICATES

31 ENGINEER GRADE 1

3.1.1 Minimum age
- Not prescribed

3.1.2 Prerequisite certificate
- Engineer Grade 3
- or equivalent acceptable to the Authority
- Need not be currently valid

3.1.3 Medical fitness
- Evidence of medical fitness, including eyesight and hearing, to the satisfaction of the Authority.

3.1.4 Qualifying service
- Not less than 36 months at sea as engineer on ships of not less than 400 kW propulsion power
- Not less than 24 months of that period shall have been served on ships of not less than 750 kW propulsion power while holding a certificate as Engineer Grade 3, and
- Not less than 12 months of that period shall have been served while in charge of a watch on ships of not less than 750 kW propulsion power.

3.1.5 Examination
- Pass in the examination specified in 4.2.1 of Section 4.

32 ENGINEER GRADE 2

3.2.1 Minimum age
- Not prescribed

3.2.2 Prerequisite certificate
- Engineer Grade 3
- or equivalent acceptable to the Authority
- Need not be currently valid

3.2.3 Medical fitness
- Evidence of medical fitness, including eyesight and hearing, to the satisfaction of the Authority

3.2.4 Qualifying service
- Not less than 24 months at sea as engineer on ships of not less than 400 kW propulsion power
- Not less than 12 months of that period shall have been served on ships of not less than 750 kW propulsion power while holding a certificate as Engineer Grade 3.

3.2.5 Examination
- Pass in the examination specified in 4.2.2, of Section 4

33 ENGINEER GRADE 3

3.3.1 Minimum age
- Not less than 18 years

3.3.2 Prerequisite certificate
- Not prescribed

3.3.3 Medical fitness
- Evidence of medical fitness, including eyesight and hearing, to the satisfaction of the Authority.

3.3.4 Qualifying service
- Not less than 12 months at sea as engineer while holding a certificate as Engineer Grade 4; or
.. Not less than 12 months at sea as engineer on ship of not less than 400 k.w. propulsion power on completion of an engineering apprenticeship acceptable to the Authority, or

.. Not less than 3 years program of training approved by the Authority

... including not less than 12 months at sea as marine engineer on ships of not less than 400 k.w. propulsion power.

*Note:* 3 years is the minimum period required under Regulation III/4, STCW '78.

3.3.5 Examination
- Pass in the examinations specified in 4.2.3 of Section 4.

3.4 ENGINEER GRADE 4

3.4.1 Minimum age
- Not less than 18 years

3.4.2 Prerequisite certificate
- Not prescribed

3.4.3 Medical fitness
- Evidence of medical fitness, including eyesight and hearing, to the satisfaction of the Authority.

3.4.4 Qualifying service
- Not less than 12 months at sea as engineer while holding a certificate as Engineer Grade 5, or
- Not less than 12 months at sea as engineer on completion of 3 years workshop service acceptable to the Authority, or
- Not less than 3 years program of training approved by the Authority.

... including not less than 6 months at sea as marine engineer

3.4.5 Examination
- Pass in the examination specified in 4.2.4 of Section 4

3.5 ENGINEER GRADE 5

3.5.1 Minimum age
- Not less than 18 years

3.5.2 Certificate
- Not prescribed

3.5.3 Medical fitness
- Evidence of medical fitness including eyesight and hearing to the satisfaction of the Authority.

3.5.4 Qualifying service
- Not less than 3 years program of training approved by the Administration
- Including not less than 1 year at sea in work associated with engine operation
- Including not less than 1 year in an engineering workshop.

3.5.5 Examination
- Pass in the examination specified in 4.2.5 of Section 4.

3.6 STEAM ENDORSEMENT

3.6.1 Grades of endorsement
- Certificates of any grade other than Grade 5 may be endorsed for service on steamships.
SECTION 4. REQUIREMENTS FOR EXAMINATIONS

4.1 GENERAL REQUIREMENTS

4.1.1 Evidence of eligibility

- Application for examination shall be accompanied by evidence, to the satisfaction of the Authority, of

  - age (where required)
  - prerequisite certificate
  - qualifying service
  - ability, sobriety and general good conduct
  - medical fitness.

4.1.2 Notice of examination

- Application for examination should be made not less than 1 month before the scheduled date of examination.

  - except that late application may be accepted in cases of need.

4.1.3 Language

- Examinations shall be conducted in the English language.

  - except that examinations for Engineer Grade 5 may be conducted in a language of the country in which the examination is held, and

  - examinations for any grade of certificate may be conducted in the French language where needed.

- Candidates may be required to demonstrate their ability to communicate effectively in the English language, or in the French language where needed.

  - except this may not be required for Engineer Grade 5.

4.1.4 Qualifying service deficient

- Where qualifying service is deficient by less than 3 months and examinations are held infrequently, a candidate may be allowed to take the examination.

  - provided that a certificate shall not be issued until the deficiency is made up.

- Where, on completing an examination, a candidate is found to be deficient in qualifying service the certificate shall not be issued.

  - provided that, where the deficiency does not arise through any wilful act or misrepresentation by the candidate, the certificate may be issued after the deficiency has been made up.

4.1.5 Service in non-commercial vessels

- Service in non-commercial vessels shall be assessed on its merits having regard to the principles expressed in this Code.
4.1.6 Conduct of examinations

Examinations will be conducted in accordance with the rules and procedures specified in § of the Part.

2 PARTICULAR REQUIREMENTS

4.2.1 Engineer Grade 1

- Examination subjects to be passed are:
  - Part A, Section 1 - Applied Mechanics
    Section 2 - Heat Engines
  - Part B, Section 1 - Electrotechnology
    Section 2 - Naval Architecture and Ship Construction
    Section 3 - Engineering Knowledge, General
    - Engineering knowledge, Motor, as applicable
    - Engineering knowledge, Steam, as applicable
    - Engineering Knowledge, Oral

Notes:

Part A may be taken any time after obtaining a certificate as Engineer Grade 2.

Part B may be taken any time Part A has been passed and the qualifying service has been completed.

All subjects in a Section must be taken and passed at that same examination.

- Supplementary short courses:
  - First aid
  - Firefighting
  - Survival (full)

4.2.2 Engineer Grade 2

- Examination subjects to be passed are:
  - Part A, Section 1 - Applied Mechanics
    Section 2 - Applied Heat
  - Part B, Section 1 - Electrotechnology
    Section 2 - Naval Architecture & Ship Construction
    Section 3 - Engineering Knowledge, General
  - Engineering Knowledge, Motor, as applicable
  - Engineering Knowledge, Steam, as applicable
  - Engineering Knowledge, Oral

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Part A may be taken any time after obtaining a certificate as Engineer Grade 1.
Part B may be taken any time after Part A has been passed and the qualifying service has been obtained.

All subjects in a Section must be taken and passed at the same examination.
- Supplementary short courses
- First aid
- Firefighting
- Survival (full)

4.2.3 Engineer Grade 3

- Examination subjects to be passed are:
  Part A, Section 1 - Applied Mechanics
    Section 2 - Heat and Heat Engines
    Section 3 - Engineering Drawing
  Part B, Section 1 - Electrotechnology
    Section 2 - Naval Architecture and Ship Construction
    Section 3 - Engineering Knowledge, Motor, as applicable
    Engineering Knowledge, Steam, as applicable
    Engineering Knowledge, Oral.

Part A may be taken any time after training has commenced.
Part B may be taken any time after Part A has been passed and the qualifying service has been obtained.

All subjects in a Section must be taken and passed at the same examination.
- Supplementary short courses:
- First aid
- Firefighting
- Survival (full)

4.2.4 Engineer Grade 4

- Examination subjects to be passed are:
  Part A, Section 1 - Applied Mechanics
    Section 2 - Heat and Heat Engines
    Section 3 - Engineering Drawing
  Part B, Section 1 - Electrotechnology
    Section 2 - Naval Architecture
    Section 3 - Engineering Knowledge, General
    Engineering Knowledge, Motor
    Engineering Knowledge, Oral.
Notes

Part A may be taken any time after training has commenced.

Part B may be taken any time after Part A has been passed and the qualifying service has been obtained.

All subjects in a Section must be taken and passed at the one examination.

- Supplementary short courses
- First aid
- Firefighting
- Survival (limited)

4.2.5 Engineers Grade 5

- Examination subjects to be passed are:
  Part A - Practical Mathematics
  Part B - Engineering Knowledge, Written
  Engineering Knowledge, Practical and Oral

Notes

Part A may be taken any time after training has commenced.

Part B may be taken any time after Part A has been passed and the qualifying service has been obtained.

All subjects in a Part must be taken and passed at the one examination.

- Supplementary short courses
- First aid
- Firefighting
- Survival (limited)
The Governments of FIJI, PAPUA NEW GUINEA and
SOLOMON ISLANDS [hereinafter called the "host Govern­
ments"] pursuant to the decision reached at the 10th
meeting of the South Pacific Regional Shipping Council
held at Rarotonga, Cook Islands on 20-21 April, 1982
have agreed to make available to the participating
countries their maritime training schools [hereinafter
called "the Regional Training Schools"] and examinations
centres [hereinafter called "the Regional Examination
Centres"] for purposes as hereinafter set out and the
Governments of COOK ISLANDS, KIRIBATI, NAURU, NIUE,
TONGA, TUVALU, VANUATU and WESTERN SAMOA have agreed not
to:

(a) compete with the Regional Training
Schools by providing similar courses at
Grade 4 levels or above; and not to

(b) issue certificates entitled "Pacific
Region" unless the candidate has been
examined and found competent by an
approved Regional Examiner.

PROVIDED THAT acceptance of the Memorandum of
Understanding by host Governments will not prejudice the
nature of the administration or organisation of the
centres and the obligations pertaining to the host
Governments, schools and centres are as expressly set
out in this Memorandum.

1. The Regional Training Schools undertake to
liaise with each other to:

(a) provide courses on Uniform Maritime
Standards on a regular basis;

(b) co-ordinate maritime training programmes
with each other so as not to duplicate
courses or compete unnecessarily for
students from participating countries;

(c) circulate their co-ordinated training
schedules to participating countries
regularly;

(d) consider applications for courses from
students at Grade 4 level or above from
participating countries or their
sponsors on the same terms as students of
the respective home country and, in
particular, applications to participate
in the Solomon Islands Engineering App­
renticeship Scheme and the Fiji Deck and
Engineering Cadet Training Scheme;
(e) charge participating countries economic, but not excessive, fees for their students;

(f) maintain the approved standards in staffing and equipment as established and amended from time to time by the Advisory Committee on Uniform Maritime Standards.

2. The Regional Examination Centres undertake to:

(a) guarantee examination services being regularly available to suit the timing and level of courses being conducted at Regional Training Centres;

(b) maintain adequate staffing by properly qualified staff according to the minimum standards approved by the Advisory Committee on Uniform Maritime Standards;

(c) facilitate secondment of staff to or from other Regional Examination Centres in emergency situations;

(d) liaise with other Regional Examination Centres in order to:
   i) maintain and upgrade the standards and efficiency of each institution;
   ii) share the Regional Examination Question Bank and maintain its security; and
   iii) maintain the integrity of the regional examination system;

(e) provide, for an economic fee, examination services at Grade 5 level in countries not possessing examination facilities where sufficient candidates make this economically viable.

MISCELLANEOUS

Amendments to this Memorandum of Understanding may be made at any time by unanimous agreement of all parties. The text of any amendment proposed by a party shall be submitted to the Director of SPEC who shall transmit it to the other parties.

The scope of training may be extended to any country which is not a signatory but has accepted the obligations contained in this Memorandum.
SIGNED for and on behalf of the Government of TUVALU by: 

in the presence of: 

SIGNED for and on behalf of the Government of VANUATU by: 

in the presence of: 

SIGNED for and on behalf of the Government of WESTERN SAMOA by: 

in the presence of: 

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BUILDING ESTIMATES

The Public Works Department's estimate is shown below and is itemised as Class C estimate for the proposed Marine Engineering complex of the Fiji School of Maritime Studies:

Marine Engineering Overhauling Workshop $250,000.00
Marine Engine Simulator/Laboratory Room $282,000.00
Kitchenet/Canteen/Student Amenities/Library $450,000.00
Engineering Machine Shop $300,000.00
3 Classrooms Block (above Simulator room)
Seamanship Workshop (above Machine Shop)
Student Dormitory Block $420,000.00

Total $1,702,000.00

TRAINING EQUIPMENT ESTIMATES

Diesel engine Simulator $500,000.00
Training Equipments $1,900,000.00
Radar Simulator $500,000.00
RECOMMENDATION BY OVERSEAS EXAMINERS

1. Master Pacific Island Examination (G2M) 1982 - Suva

"The standard of questions set in the examinations, marking of the papers and general conduct of the examinations confirmed my opinion that the Master Pacific Island Certificate is equal to the New Zealand 1st Mate Certificate Foreign Going."

Capt. E.G. Boyack
Principal Examiner Master & Mates
Ministry of Transport
NEW ZEALAND.

2. 1st Class Engineer Motor Examination (G2E) 1983 - Suva

"The examination was set against the syllabus for the Grade 2 Certificate of Competency (1st Class Engineer-Fiji) developed by the S.P.R.C. Advisory Committee on Uniform Maritime Standards (U.M.S.) and was marked against standards applied in Australia in the equivalent Australian Certificate as Engineer Class 2.

I am recommending that the Fijian Certificate issued consequent to this examination be recognised as equivalent to the Australian Certificate as Engineer, Class 2.

Mr R.L. Saunders
Director of Marine Qualifications
Legislation & Crew Branch
Marine Operation Division
Ministry of Transport
AUSTRALIA."