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WORLD MARITIME UNIVERSITY
Malmö, Sweden

THE REVISION OF THE INTERNATIONAL CONVENTION ON STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS (STCW) 1978; ITS IMPLICATIONS AND IMPACT ON MARITIME EDUCATION AND TRAINING IN FIJI AND THE SOUTH PACIFIC.

By

AKEAI MOCEIWAI

Fiji

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

MASTER OF SCIENCE

in

Maritime Education and Training

(Engineering)

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DECLARATION

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

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

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ABSTRACT

This dissertation reflects an overview of the revision of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW) 1978, and its impact on Maritime Education and Training in Fiji and the South Pacific region.

The current Maritime Education and Training in the South Pacific region is examined. This also includes the analysis of the difficulties faced, the means to improve the training and competence, and the enhancement of uniformity in training and certification standards.

The study identifies the shortcomings of the existing South Pacific Maritime Code when compared to the new STCW Convention and the amendments. The need to revise the Code and make necessary changes to the training infrastructure and systems to be compatible with the revised Convention are also highlighted.

This paper also discusses how the major players in various maritime sectors in the regional states can best implement the new STCW requirements.

Finally, the dissertation draws up its conclusions from the study made and recommends how the South Pacific Regional States, can effectively harmonise and implement the requirements of the STCW Convention 1995.

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LIST OF ABBREVIATIONS

FIT	Fiji Institute of Technology
Fed. States of Micronesia	Federated States of Micronesia
IMLA	International Maritime Lecturers Association
IMO	International Maritime Organisation
ISF	International Shipping Federation
ISM Code	International Safety Management Code
ISWG	Inter-Sessional Working Group (STCW)
MET	Maritime Education and Training
MSC	Maritime Safety Committee
PC	Personal Computer
PNG	Papua New Guinea
Rep. of Marshall Islands	Republic of Marshall Islands
SICHE	Solomon Islands College of Higher Education
SMS	School of Maritime Studies
SPMC	South Pacific Maritime Code
STCW	The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)

CHAPTER 1 : GENERAL INTRODUCTION

1.1 Background History

The Convention on the Standards of Training Certification and Watchkeeping for seafarers 1978 (STCW 78) was finally adopted during an International Conference on Training and Certification of Seafarers, held in London from June 14 to July 7, 1978. The draft was first prepared in 1971.

It was not until April 28, 1984 that the Convention entered into force after meeting the requirement that it be accepted by not less than 25 states who were Parties to the Convention, having merchant fleets totalling not less than 50 % of the world tonnage.

Although it took seven long years for the adoption of the Convention, from when it was drafted, it must be realised that the sub-committees encountered many difficulties since there was no yardstick to go by and there would be criticism and opposition from various maritime sectors if the treaty had flaws or deficiencies when it was adopted. This is typical of human nature as it strives to achieve perfection.

It must be acknowledged that those concerned did the best they could do at the time with the knowledge and the resources available at their disposal.

1.2 The Aims of the Convention

The main aims of the STCW Convention were:

1. to establish an uniform minimum standards of training, certification and watchkeeping to be recognised and accepted on a global basis;

2. to transfer the details of all technical requirements to an associated Code;

3. to ensure Administrations maintain direct control of the endorsement and qualifications of the seafarers they authorise to serve on their ships;

4. to ensure that states that are Parties to the Convention co-operate and answerable to each other thus enhancing effective implementation of the Convention and also the quality of their training and certification activities;

5. to clarify the required skills and competence; and

6. to minimise the delay of the new amendments of the Convention to enter in to force.

It had been generally believed and agreed that the Convention was out of date and inadequate to address several important issues. It was argued that the Convention was losing its credibility in the political and the public fora in relation to recent shipping disasters caused by human error. There was also a growing criticism of the Convention and of IMO, in being ineffective and unresponsive to the safety needs of the travelling public and the protection of the marine environment from accidental pollution. Whilst the treaty had served its purpose well for over a decade, the Parties decided in 1992 that it was time for a revision to be undertaken.

The following were some of the areas that were identified to be the weak links, or had deficiencies:

1. The current Convention mentions the minimum knowledge required before the issuance of the certificates, but it is left to the administration to determine whether the knowledge has been absorbed and understood. What this means is that the Convention does not precisely state the required standards that could be measured, neither does it mention that one should be competent; this leads to different

interpretations. In practice this results in different standards being applied internationally.

2. In addition to this, the process by which the National Governments or Flag States ratify the Convention is not specified, neither does it have the guarantees that the objectives of the Convention are adhered to. In other words, how a State will ensure that it complies or effectively implements the existing Convention is not known. The minimum standard required varies to such an extent that confidence is lost as to the reliability of certificates issued by some states.

3. It is also raised that the current Convention is not flexible enough when it addresses the standards of competence, as it is written in terms of normal on board work organisation which includes the officers, ratings and the traditional departmental sections. This entails that the ability to introduce new work systems is limited since it does not cater for the effective and safe use of advanced technological training equipment such as simulators and micro-computers. One may say that the Convention is too restrictive to address the trends and demands of the future.

The revision of the STCW Convention and the adoption of the amendments is timely as one must realise that navigation is not only to transport cargo from one port to another to render service, achieve maximum efficiency and cost effectiveness; it must always be associated with optimum safety for the ship, the crew, the cargo and the environment as well.

1.3 Objectives of the Project

This dissertation proposes to:

1. examine the current Maritime Education and Training (MET) system in Fiji and the South Pacific forum countries;

2. examine the impact of the amendments/changes, and modifications on the South Pacific regional states;

3. consider how best to implement the new requirements contained in the STCW annex and the Code;

4. make proposals and recommendations to assist compliance with the Convention during the transitional period.

1.4 Scope and Limitations

The requirement to improve the MET system in Fiji and the South Pacific regional countries represents a mammoth task. This project intends to:

- highlight the MET systems in the South Pacific Forum countries;

- make proposals and recommendations on how the three regional maritime training centers, namely, Fiji, Papua New Guinea and the Solomon Islands, can assist the other forum member countries to implement the revised STCW Convention.

CHAPTER 2: MARITIME EDUCATION AND TRAINING IN THE SOUTH PACIFIC.

2.1 FIJI

The republic of Fiji, which consists of 320 volcanic, limestone and coral islands is located between latitudes 15° to 22° south and longitudes 177° west to 175° east. The total land area is about 18,272 square kilometres having an exclusive economic zone ocean area of 1.26 million square kilometres. Suva, which is the capital of Fiji, is the center of economic activity, and is located on the south eastern side of the largest island Viti Levu.

2.1.1 MET Background

The maritime school was first established in the early seventies by a British consultant/lecturer when the Fiji government realised the need to train its seafarers to man its ships efficiently and safely. Hence, Fiji adopts the British maritime training system.

2.1.2 The School of Maritime Studies.

The School of Maritime Studies (SMS) is one of the ten schools that is under the umbrella of the Fiji Institute of Technology (FIT). The school became operational around 1970 at the Vocational Training Center at Vatuwaqa. Because the center was congested and inadequate in training equipment and facilities, it was decided to shift

the school to the Derrick Technical Institute, in Samabula, which is now called the Fiji Institute of Technology.

The SMS was relocated in 1982 to its present site which is ideally located on its own campus with its jetty and waterfront overlooking Laucala Bay, situated to the north east of Suva City.

The school upgraded its maritime training facilities to meet the STCW Convention standards after Fiji acceded to the named treaty on June 27, 1992.

2.1.3 Courses Offered

The courses offered were designed based on the following general objectives:

- to provide a system of education and training for school leavers who wish to follow a maritime related career in nautical science, marine engineering and boat or shipbuilding;

- to assist practising seafarers in upgrading their maritime career by offering suitable education and training in preparation for the various grades of examinations conducted by the Fiji Marine Board;

- to serve seafarers, other allied industries and the community by arranging and offering specialist short courses;

- to provide an atmosphere which contributes to the students realising their full potential;

- to develop seafarers to international standard, which is essential to the future of the maritime industry.

Table 2.1

Course Programme

Courses	Duration
MARINE ENGINEERING	
Engineering apprentice (Stages 1-5)	18 wks/stage
Grade 5 Engineer	18 wks
Grade 4 Engineer	36 wks
Grade 3 Engineer	36 wks
Grade 2 Engineer	36 wks
NAUTICAL SCIENCE	
Deck apprentice (Stages 1-5)	18 wks/stage
Grade 5 Mate/Master	18 wks
Grade 4 Mate/Master	36 wks
Grade 3 Mate/Master	36 wks
Grade 2 Mate/Master	36 wks
SHIP/BOAT BUILDING	
Trade Certificate Stages (1-4)	18 wks/stage
Advanced shipbuilding	18 wks
Boat building	18 wks
SHORT COURSES	
Sea survival	1 wk
Radio telephony	3 wks
Radar limited	2 wks
Radar full	3 wks
Electronic navigational aid	3 wks
Fire fighting	1 wk
First aid	1 wk
Petroleum/Chemical tanker familiarisation	1.5 wks
Gas tanker safety	1 wk

Source: FIT Prospectus (1996)

The three sections that make up the SMS are: the Nautical Science, Marine Engineering and the Boat/Shipbuilding sections.

The Nautical Science and the Marine Engineering sections offer courses ranging from cadet training up to Grade 2 upgrading courses. The Grade 2 courses are offered subject to demand. The Boat/Shipbuilding Section offers Ship Trades up to Advanced Trades Certificates.

Short courses are conducted by the school or arranged to be conducted by other organisations.

2.1.4 Resources: Staff and Equipment

The present establishment caters for sixteen academic staff members consisting of the Head of School, three Senior Lecturers, eight Lecturers, and four Assistant Lecturers. Staff training and development has been an on-going programme for some time, both locally and abroad. Most of the local staff who undergo training are lured by better paid jobs and opportunities elsewhere such as in other government departments, in the private sector and within greener pastures abroad when they graduate, so that the training cycle starts all over again. The SMS has been relying on expatriate staff to alleviate the situation; but they are normally recruited for a short duration only.

On January 1, 1996, the FIT became autonomous and started operating as an independent entity from the government. One of the major reasons behind this move was to improve staff salaries and conditions, to reduce the brain drain and to try to attract competent and highly qualified personnel to the Institute.

The technical equipment available at the school at present is sufficient for the courses that are being offered, but in order to cater for future trends and demands, then additional equipment has to be procured.

2.1.5 Implementation of the Existing Convention

Fiji acceded to the STCW Convention on June 27, 1991 and utilises the SPMC as a guideline for its manning and certification standards. It is believed that Fiji's regulations exceed the SPMC requirements in some areas for Pacific voyages. It also issues limited certificates to small craft on inter-island trade routes which is quite legal, logical and accepted for small craft where limited operation is involved. The authority that is responsible for the manning and certification and also the examination of the upgrading courses, is the Marine Department.

2.2 PAPUA NEW GUINEA

Papua New Guinea stretches from longitudes 141 to 160 degrees east and from latitudes 0 to 14 degrees south, with a total land area of 462,840 square kilometres, covering about 3,120,000 square kilometres of ocean in its exclusive economic zone.

2.2.1 MET Background

The MET system in Papua New Guinea was first established in 1976 to cater for deck seamen and engine room ratings training. There were about 40 students who enrolled in the first year with 12 staff, mostly expatriates.

2.2.2. The Maritime Training College

The Maritime Training College, which is situated in Madang, is self contained with accommodation, classrooms and workshops on the same property and is located on the waterfront of the Wagol river where it meets the Binnen harbour.

Table: 2.2

2.2.3 Courses Offered

COURSES		DURATION
Deck Cadet Officer		24 weeks
Engineer Cadet Officer		60 weeks
E/R Grade 1 Mech. 2		14 weeks
Mate Grade 5		20 weeks
Mate Grade 4		20 weeks
Engineer Grade 5		15 weeks
Engineer Grade 4 Part A		29 weeks
Engineer Grade 4 Part B		17 weeks
Engineer Grade 3 Part A		29 weeks
Engineer Grade 3 Part B		17 weeks
Coxswain 3		9 weeks
Coxswain 3		9 weeks
Deck & E/R Rating 2		12 weeks
Deck Rating 1/ Seaman 1		5 weeks
E/R Rating 2		5 weeks
Deck Rating 2		8 weeks
Deck Rating 1		5 weeks
Basic Short Courses		
Fire Fighting	Proficiency in Survival Craft	) These courses
Basic Survival	First Aid at Sea	) are offered
Senior Officer Fire Fighting	Radio Telephone	) on demand
Electronic Navigational Aids	Radar Observer	)

Source: The development of a Regional Maritime Training Plan (1993)

The courses offered by the Nautical stream range from Deck Ratings to Grade 2 Mate, whilst the Marine Engineering stream offers Engine Room Mechanics to Grade 2 Engineer.

The main center for examinations is in Madang which is in close proximity to the college. The examiners for both ship departments are well qualified, but some concerns have been raised owing to differences in the standards of examinations. Ship Safety Officers at other ports had written, invigilated and marked their own examination papers for some courses. In this regard the examination standard is doubtful and is a matter of some concern.

2.2.4 Resources: Staff and Equipment

The number of academic instructors in the college amounts to thirteen with an appropriate support staff. These instructors are all qualified, consisting of five Marine Engineers and three Master Mariners; all having a teaching experience of at least five years on average. Almost all of these instructors are expatriates on short-term contracts. It is important that locals are trained to fill these positions when the expatriates leave. In this respect, it is unfortunate that the management of the college does not favour teacher training and development as it is claimed that it makes the instructor more chalkboard oriented and less practical minded.

The ability to adapt comfortably to teaching is indeed an asset to an instructor which may be true at the lower levels of the courses. However, the instructor must not forget the extra benefits to be achieved through the students by ensuring that the message that is imparted is received and fully understood. To master such techniques and methodology the instructor needs to attend staff training and development courses.

The maritime college has been fortunate to receive generous grants in aid assistance from the Government of Australia in the form of technical equipment and personnel as instructors and consultants. These personnel have been instrumental in the development of the college, which is now offering courses up to Grade 2 Mate and

Engineers. This is very economical to the shipowners, and also benefits the industry, as their personnel are not sent to institutions abroad for extra qualifications in order to man their ships to fulfil the regulations.

2.2.5 Implementation of the Existing Convention

On January 28, 1992, Papua New Guinea acceded to the STCW Convention; it also uses the SPMC as a guideline for its manning and certification requirements. Before the Government signed the treaty there was an 'unofficial' agreement between the college and the examination office to follow the SPMC guidelines. The authority responsible for the manning, certification and ship safety in the country is the Maritime Division.

2.3 THE SOLOMON ISLANDS

The Solomon Islands is located between latitudes 5 and 12.5 degrees south and longitudes 155 to 170 degrees east having a total land area of 29,785 square kilometres. It is made up of a few islands which cover an ocean area of about 1,340,000 square kilometres.

2.3.1 The Marine and Fisheries Studies

The maritime institution was established as part of the Marine Department in 1962 when the Marine Engineering Section was part of the school on the same campus. At present, the Navigation and the Marine Engineering Sections are operated under different schools, although they are part of the Solomon Islands College of Higher Education (SICHE). The Navigation Section is attached to the Fisheries School and is called the Marine and Fisheries Studies while the Marine Engineering Section is part of the School of Industrial Development. Since there was a shortage of accommodation space, the Marine Engineers were separated from the school in 1986.

The administration of the School of Marine and Fisheries Studies is done by a council of professionals who are experts in their own departments/industry representing seven schools under SICHE. The Head of School reports directly to the Director of the college, who is a member of the Council. The school is regarded to maintain a reputation over the years for adequately catering for the needs of the industry, by providing education and training for the commercial sector and also the fishing industry.

Table: 2.3

2.3.2 Courses Offered

Programme	Duration
SEAMANSHIP AND CERTIFICATION COURSES	
Coxswain bridging courses	4 weeks
Coxswain Class 1,2,3	9 weeks
Deck Cadet	24 weeks
Basic Seamanship	9 weeks
Mate Master Solomon Is.	18 weeks
Mate/Master Solomon Is.	36 weeks
Diploma in Mar. Eng.	36 weeks
Grade 5 Cert. of Comp.	18 weeks
Grade 4 Cert. of Comp.	18 weeks
SAFETY COURSES	
Shipboard Fire fighting	1 day
Sea survival	1 day
Restricted Radio Operator	1 week
Radar observer	2 weeks
Radar Simulator	3 weeks
Small Ship Stability	1 week
Electronic Navigation System	1 week

Source: SICHE handbook, 1996.

The school intake for 1993 was 170 students on full time studies, ranging from 9 to 36 weeks duration. The demand is on the increase so hopefully by 1996 the number would be around 200 students annually. The courses offered vary from Coxswain to Grade 2 Mate in the Nautical section, while the Marine Engineering Section conducts courses up to Grade 4 Engineer.

2.3.3 Resources: Staff and Equipment

The members of staff consist of the Head of School, seven instructors, a technician and the support staff. One of the goals of the school is staff training and development for the locals, as it can be reflected by the qualifications of the staff, some of whom have had overseas training stints to cater for the diversified programme. The instructors could boost their confidence and abilities in the classroom if teacher training was provided, especially for adult education. The instructors are well versed with practical classroom experience, but if a formal course in curriculum development, lesson planning and teaching aids was provided it would be of a tremendous advantage to the individuals.

The spirit of co-operation is very much alive between the school and the industry as it is evident that the expertise that is not available in the school staff, is overcome by the secondment of experienced and knowledgeable personnel from the industry.
The school is sufficiently equipped for the courses it is offering at present, but in order to meet future demands, then a major upgrading and development will have to be taken. This is no easy task, taking into account the limited resources available, so the school will have to rely heavily on its major aid donors.

2.3.4 Implementation of the Existing Convention

The Solomon Islands finally acceded to the STCW Convention on September 1, 1994 after a lengthy period of awaiting the politicians final decision to ratify the

Convention. It is encouraging to note that the Solomon Islands had followed the STCW Convention and the SPMC guidelines very closely before it ratified the named Convention.

The authority that is responsible for manning and certification is the Marine Department which also conducts examinations for certificates at the end of the courses. Examinations may also be conducted at other times as and when required. The successful candidates are awarded Certificates or Diploma in Marine Studies in addition to Certificates of Competency when they graduate.

2.4 Difficulties in the Implementation and Improvement of Training and Competence Standards in Fiji

A number of difficulties are faced in these areas in Fiji. These include:

2.4.1 High Failure Rate

The Grades 2 and 3 Upgrading courses have high failure rates which is a great concern. Where do the problems lie? Are they in the Marine Department examination papers? Are the standards of examination too high or the education and training standards not up to standard or both? Are they in the teaching syllabus or is it the instructors? Do the examination questions cover the areas which the school does not consider important? Is there an existing system of moderating the questions before and evaluating the marking after the examinations? These are important issues that contribute to high failure rates.

It is of prime importance that the two organisations come up with an amicable solution so that the school can take remedial action to improve the situation. It is not appropriate to have incompetent people obtain Certificate of Competency, but it is counter-productive to have a high number of failures of competent and capable people because of the lack of communication between the two organisations. It is also apparent that there is a lack of communication and consultation between the school and the industry it serves.

Pertaining to this matter, the school has been promoting the revival of the inactive Advisory Committee, which consists of the Marine Department examiners, a representative from the Fiji National Training Council and the Head of School. It would add some value to this committee if the Seamen's Union and the Ship Owners' Association were represented. The school should be encouraged to foster close relationship, team work, and co-operation to provide feedback on the quality of the product and the industry's needs. The advice from these sources would be invaluable to support the school's activities.

2.4.2 Shortage of Competent and Qualified Staff

The staff training and development programme has been a major issue at the school since its inception. Local staff have been doing in-house training and have also been exposed to training institutions abroad, but they are easily lured by more lucrative jobs after they graduate. Expatriate staff have been recruited to fill the void, but these are usually for a short duration only. It is necessary to keep the programme going for the following reasons:

- to improve the individual's understanding and broaden the knowledge which is related to the area of work and to ensure that the lecturer continues to be proficient and competent in his profession;

- to improve the lecturer's capabilities to allow performance to be efficient and effective to fulfil departmental expectations and objectives;

- to equip the instructor with the necessary tools, to undertake the applied and operational research to improve the schools system and thus to assist to contribute positively to the development of the industry.

The staff salary and conditions have improved since the FIT became independent from the Education Department on January 1, 1996. One of the main reasons for this,

was to minimise the brain drain and attract competent and qualified personnel to the institution. Whether this strategy will be successful, only time will tell.

2.4.3 The Need for Quality Teachers

The majority of teachers at the SMS are former seafarers, many of whom teach by the same methods as they were taught. While most had the benefit of teacher training, many do not have the understanding of the science of teaching or pedagogy, and do not see their role as that of a teacher but more as that of lecturer/instructor. Regrettably, students attitudes and motivation are less matters for concern. Many teachers fail to understand that one of the primary elements in teaching is to motivate the students to facilitate learning.

There must be a greater awareness by the maritime teachers of the needs of good teaching and how best to transfer knowledge and modern concepts. Many teachers need to extend their teaching abilities so that they move away from basic instructing and lecturing, to develop a wider range of teaching skills. A greater exposure to the mainstream developments in education is much needed. The focus on maritime teaching is too job specific and examination oriented, thus resulting in the teaching being too remote from the mainstream education. Opportunities must be created and 'bridges built' for academic staff of the SMS to interact with other maritime academies in the region in pursuit of how best to transfer knowledge.

2.4.4 Qualities of a Good Teacher

In this regard, it is the quality of teaching that determines the amount of learning. A good teacher is creative, innovative and is able capture the imagination and the interests of the student and motivate him to learn. Some of the special qualities required of a teacher are:

- having an attractive presence and personality with the ability to communicate in an interesting manner;

- knowing the subject matter thoroughly, that enables the knowledge to be imparted or communicated accurately and effectively, with confidence and interest;
- understanding the students' needs and the ability to adapt the teachings to meet those needs;
- having the qualities that embraces the learner's respect so that the learner sees him as a teacher in the true sense of the word;
- having the ability to use modern technology to improve the teaching.

2.4.5 Teaching Methods

Seafarers of the modern age require a greater range of knowledge and skills thus the necessity of a greater range of teaching methods to be used at the SMS. The instruction system needs to be reviewed and developed which necessitates more participation, student based activities to take place. The following is a list of different teaching/learning methods, only lecturing and practical instructions are extensively used at the SMS.

- Lecture
- Question and answer
- Tutorial
- Practical
- Independent or private study
- Discussion group
- Role play
- Symposium, debate
- Programmed instruction
- Audio-visual
- Audio-tutorial
- Personalised instruction
- Case study
- Simulation
- Team teaching

It is obvious that when there are a large number of students with limited resources, there is often not much discretion available in choosing the most appropriate teaching methods. Lecturing to large group is inevitable and tends to prevail. The general outcome is a lack of personal contact and inadequate understanding of individual needs.

Effective teaching demands a number of highly developed skills, among other things it requires:

- a thorough knowledge of the subject being taught, an up-to-date and comprehensive understanding of the subject proper to enable the teacher to deal with issues using examples to illustrate theory and also relate to practice;

- an understanding of the students' needs, the range and depth of the knowledge required, their learning abilities and disabilities, their background and experience with respect to understanding the subject;

- a high degree of ability to communicate, to explain what is being taught with sufficient clarity for the students to learn. At the same time to generate interest and motivate learning and done so in an atmosphere that is enjoyable and pleasant to the students and at the same time brings satisfaction to the teacher.

Where resources are available, more student based interactive teaching methods should be used. The development of simulation exercises in various aspects of ship activities should be encouraged. Case study and role play could be used to develop shipboard management skills. The mentioned teaching methods require highly developed teaching skills and subject knowledge. Many maritime teachers have not been adequately exposed to such teaching methods because there has been insufficient preparation in many aspects and opportunities of the teacher's role. In this context, it may be stated that whatever the teaching method or advance in educational technology has the potential to assist greatly in teaching, it cannot make a significant

contribution to education unless it is used by competent teachers, who understand what teaching is all about and know the learner's needs.

2.4.6 Research

An important area that requires attention is research. In a school like the SMS, lack of research means that there is little or no development which has resulted in no addition of new knowledge. Syllabi that are obsolete are still being used and subject contents that are no longer relevant are still being taught.

Revision of the syllabi is now due. This has to be done at regular intervals, say about every four years to address current technological advancements, the needs of the industry and the nation.

The syllabi should be in the objective format whereby the level of education and training required is specifically outlined to carry out a particular task, with acceptable and appropriate performance for certification. What is required is to maximise the existing capabilities of the school by having representatives from the government, the industry, other institutions and the school to initiate this activity.

Research work can cover such areas as the analysis of student and staff performances, evaluation of courses by undertaking survey work among the users, the adequacy and effectiveness of subject timeframes, the impact of modern technology on traditionally trained seafarers, and the need for refresher courses or retraining.

Educational research may also be carried out in areas such as, the survey of secondary school student career interests, such as in seafaring. In addition, the lecturer will have to do extensive literature research to improve the teaching materials, the use of teaching aids and the skill to enhance personal knowledge.

2.4.7 The Need for Qualified and Competent Examiners

Some of the examiners in the Marine Department are not well qualified and neither have they had formal training in the preparation and the conduct of the examinations and the work they are executing. This results in the future of the students being entirely at the mercy of the examiners. It would be appropriate for these examiners to have at least qualifications that are a grade higher for the lower grades, equivalent qualifications for the upper grades that they are examining and to have formal training in examination methodology and techniques.

Examiners must understand the subject matter, the needs of the candidate and the qualification requirements that the examination is for. He should be able to communicate clearly, so that the candidate understands the question he is asking. In addition to that, the examiner should have a clear sense of the standard of knowledge and skill necessary for success in the examination. A high degree of psychological skills are required to ensure effective interaction with a tense and nervous candidate.

2.5 Regional Co-operation in Enhancing the Uniformity of Training and Certification Standards

Maritime education and training, examination, manning and certification, legislation and regulation processes have been done individually by the forum island countries. Although some countries have ratified the STCW Convention and adopted the SPMC as the standard for manning and certification, others still use their own legislation standards which are outdated. If these countries do co-operate to develop a standard maritime legislation, education and training methodology, the evaluation of the product and the issuance of the qualifications that are recognised internationally, it would be a tremendous advantage to these nations. A drawback of a standard on a regional base is that a country may be forced to accept a higher standard than is necessary for its needs. The principal areas that need regional co-operation are listed below:

2.5.1 Legislation and Regulations

Some island nations have developed their own legislation to suit their own needs or copied the same from other sources when their needs dictated such action. Fiji could assist in this area as it is regarded to have the most developed maritime legislation package when compared to other forum countries in the region, the scope of which is both comprehensive and relatively complete. Assistance could be extended by Fiji to less developed nations to develop their own legislation. These documents could be ideal models for others, or representatives from these nations could be seconded to Fiji to study its systems, or Fiji could assist in developing a standardised legislation programme for the forum island nations.

As is usually the case with other countries, marine legislation in the Forum nations is not a priority and the need to comply with International Standards and Conventions hinders the development process. Unless there is some emergency or disaster caused by violation of the legislation, these may not receive any consideration. Some island nations have not ratified the STCW Convention, (refer to figure 2.1) neither have they legally endorsed the SPMC as their manning and certification standard.

The employment of islanders on foreign ships may be jeopardised if their governments continue to evade acceding to the STCW Convention; this would have direct socio-economic effect on the individual families, also to the nations who rely heavily on this foreign exchange, entering their countries.

With co-operation and a combined effort of the island nations to share the task, maritime legislation could be developed speedily to be used by these nations. A more wider scope and effective legislation can be drawn up, which would be produced at a reduced cost, without causing too much of a burden to any one nation. The duplication of effort and inappropriate legislation is eliminated as different people would have different points of view to criticise the document in order to bring about an ideal one.

Each nation is to determine what parts of the legislation are its priority. In most cases this would be similar. If all parties indicate what the legislation should achieve, or which special provisions are required, then the development of a general document should be carried out. These tasks should be divided out in sections amongst the nations, and by doing so, different sections can be advanced simultaneously saving a lot of time and effort. The common document could ideally accede to the STCW Convention, so the forum countries could refer to or be governed by this standard document. This would greatly minimise the misinterpretation of each nation's legislation.

2.5.2 Education and Training Programmes

The island nations have developed their own education and training curriculum such as syllabi, course and subject objectives, lesson plans, teaching aids and support materials for use in the classes. The programmes were developed to serve the specific needs of the nations and the industry they serve. At the same time other institutions of other nations are carrying out the same activities, duplicating the efforts and wasting resources as nations develop the same materials to suit the SPMC syllabus. Since the institutions are so isolated from each other and also to the outside world, the opportunity for innovations and new ideas to penetrate the region is minimal.

If the resources and the talents of the Forum Nations are pooled together they can develop terminal objectives for various programmes, subjects and the levels required. The tasks can be shared among the nations by having skilful and competent personnel to develop each module. The final result would be a standard programme made available to each nation, ready to be used when required, also meeting the regional and international standards. The developed materials would then remain the property of the region, the nation or the institution, and would not be lost, as is the case now when the instructor leaves he takes his materials with him.

This would be a trend-setter or bench mark as the standards of those institutions and nations that are somewhat lagging behind will be raised while those that are progressing well will excel. Instructional staff should be given the opportunity to do teacher training programmes which involve course design, setting objectives, developing materials and teaching aids, making lesson plans, setting and marking tests, delivery of materials in the classroom and attending workshops and seminars. Instructors should be qualified and competent in adult education; if ratings and officers must be qualified, why not their instructors?

2.5.3 Examination and Certification

The SPMC is used by some forum countries as a manning and certification standard, but there is a vast difference in the standards of questions set and likewise the marking. There are no standards to compare this to; so the future of the candidates is entirely in the hands of the examiner and possibly the shipowner's too. Most of the examiners have not had formal training in the preparation and conduct of examinations. Since there is no standard in the region, it is only proper that the SPMC should have the standards of competency of officers that are qualified to be above the minimum level required.

It would be beneficial and of great advantage if there was a concerted effort to cooperate, develop questions and evaluation methods to benefit the user nations. In this regard a larger question bank should be developed, whereby a subject could be divided into appropriate sections having essay type, short answers, mix and match, multiple choice questions and the like to cover the syllabus effectively.

Orals and practical examination techniques can be developed and exchanged between nations, which is significantly important when simulator training and other hands on activities are involved. If examinations are based on an individual's performance similar to the work place environment, then the education and training of seafarers would have to focus on performance based methods.

2.5.4 Training Equipment

The practical hands-on training equipment available at the institutions varies in type, quality and quantity. Some are well equipped while others are not and bear little relation to the programme being offered. Much of this equipment has been donated by grants in aid agencies, the type may not be the most suited to the training objectives, but donated to whom these organisations favour and not on a regional basis. This is an ineffective utilisation of resources.

With co-operation from these nations, training equipment, supplies and consumables could be procured on regional grounds and distributed to institutions which offer these programmes to at least the acceptable minimum STCW and/or SPMC standard. How the equipment is utilised should be established so that the equipment that is supplied is used in a manner compatible with the goals and objectives of the programmes. Institutions that offer the same programmes should be supplied with identical equipment. The learning outcomes, exercises and the evaluation methods that are to be carried out on the equipment should be established so that the equipment is fully utilised, and the courses standardised.

THE SOUTH PACIFIC FORUM ISLAND NATIONS

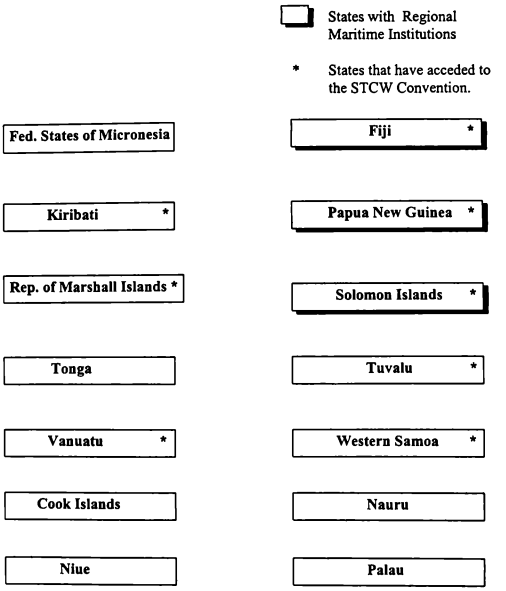


Figure: 2.1 The South Pacific Forum Island Nations

CHAPTER 3 : THE REVISED CONVENTION

3.1 Introduction

A substantial number of amendments to the STCW 78 Convention were approved, during the conference of the International Convention on Standards of Training Certification and Watchkeeping for Seafarers on July 7, 1995.
There are two new Chapters added, which include the technical regulations expanded into a new Code. The changes made will directly affect everyone in the shipping industry: the shipowners, managers, the administrators, training institutions, masters and the seafarers at sea.

On February 1, 1997 these will come into force, but it is not until August 1998 that the information on how to implement the revised requirements is to be conveyed to IMO. The amendments will be adopted by 'tacit' approval and will automatically enter into force unless a substantial number of Parties declare their intentions otherwise.

The Secretary General of IMO, Mr William O'Neil, said at the adoption of the final instrument, that the final act marked the finish of the first phase to enhance the standards of competence of seafarers globally. "The standards that you have accepted will go a long way to improving safety at sea. This is the single most important item of IMO's current work." It is realised that Parties will face problems, but Mr O'Neil

has assured that IMO would render assistance to those that would need help through the technical assistance programme.

To achieve the new standards, there is a new role for the shipowners, as Mr O'Neil added, "With the new amendments, there is a direct link to shipowners. They employ the seafarers. We must develop some arrangements where shipowners should help to implement this Convention. IMO will take steps to make this happen as soon as possible." He added: "There will be changes (in the role of IMO) following the implementation of the Convention."

3.2 The New Amendments

The STCW 95 contains amendments which, inter alia, include:

3.2.1 The STCW Code

The STCW Convention, 1978 as amended in 1995 comprises of:

Part A: of the Code contains the mandatory provisions which make specific references to other regulations in the Code. The provisions outline in detail the minimum standards of competence required to be maintained by Parties in order to comply fully with the Convention. It also specifies the standards of competence that are required to be demonstrated by candidates for the issue and the revalidation of certificates of competency under the provisions of the STCW Convention.

Part B: which is not mandatory, contains the guidance on the implementation, interpretation, application and enforcement of the Code.

Table 3.1

The new Annex to the STCW Convention

Chapter 1	General Provision (15 regulations)
Chapter 2	Master and Deck Department (4 regulations)
Chapter 3	Engine Department (4 regulations)
Chapter 4	Radio Communication and Personnel (2 regulations)
Chapter 5	Special Requirements for Personnel on Certain Types of Ships (1 regulation)
Chapter 6	Emergency, Occupational Safety, Medical Care and Survival Functions (4 regulations)
Chapter 7	Alternative Certificate (3 regulations)
Chapter 8	Watchkeeping (2 regulations)

Source: STCW Convention (1995)

3.2.2 Legislation

All mandatory provisions of the STCW Convention, regulations and Code should be immediately prepared and incorporated in the national laws, as many provisions are interrelated, adjustments could be made as and when necessary to suit the style and framework of the national standards.

3.2.3 National Administration Responsibilities

Administrations have obligations under the revised Convention. These include:

3.2.4 Certification and Endorsements

The STCW regulations will come into force on February 1, 1997 although seafarers commencing training before August 1, 1998 will be able to qualify under the 1978 requirements provided they do so before 2002. Until then Administrations may

continue to issue, recognise and endorse certificates under the provisions of the 1978 standards.

From February 1, 1997 additional documents will be required, these include:

- a document of medical fitness required to be produced when applying for any certificate;
- an endorsement with recognition of certificates issued by another party;
- certificates for ratings forming part of deck or engine watch;
- documentary evidence of ro-ro passenger ship training;
- evidence of competence in personal survival, fire prevention and fire fighting, elementary first aid, personal safety and social responsibilities or crowd management;
- a new certificate of proficiency in survival craft and rescue boats other than fast rescue boats;
- a certificate of proficiency in fast rescue boats;
- certificates of competence in advanced fire fighting, medical first aid and medical care on board ship.

Companies and seafarers must bear in mind that the originals of all certificates required by the Convention must be kept available on board ships at all times.

3.2.5 Near Coastal Voyages

The limits of near coastal voyages must be defined clearly by national law and the same should be shown on all limited certificates and endorsements. Where near coastal voyages allow voyages to take place off the coast of another party(s) the standard of competence required must be agreed with the parties involved.

3.2.6 Port State Control

Administrations have now been given additional responsibilities before the issuance of certificates. These include obtaining evidence of the identity of the candidate and maintaining records of all certificates issued, including those reported lost, stolen, forged etc. Flag states will be expected to satisfy themselves by proper investigations or inspections, that the Administration which issued the certificates, has complied in all respects with the requirements of the Convention, before recognising a certificate issued by a foreign Administration.

Additional procedures will now allow Port State Control, to intervene in the case of deficiencies if they pose any danger to persons, property or the environment. This can take place if:

- certificates are not in order;
- the ship is involved in a collision or grounding;
- there is discharge of substances causing pollution;
- the ship is manoeuvred in disorderly and unsafe manner.

Regulation A-1/4, enables Port State Control officers to ensure that seafarers on board ships are competent, qualified and can perform their duties safely and effectively to ensure safe and pollution free operation of the ship.

Similarly the same officers may investigate and seek evidence of crew training if their skill is suspicious or in question. The officers may ask to observe a demonstration of relevant skills if the evidence is inadequate or unconvincing. Their foremost priority is to verify the certificates held by the seafarers onboard.

Procedures and processes must be established by Administrations in order:

- to investigate any reported incompetence, on the part of the holders of certificates or endorsements they have issued, if they threaten life and property at sea or the marine environment;
- to have withdrawal, suspension or the cancellations of certificates and endorsements in place;
- to have enforcement of penalties or disciplinary measures if they do not comply with the national legislation in connection with the Convention.

3.2.7 New 'Company' Responsibilities

'Company' means, "the owner of the ship or the organisation or person such as the ship manager, or bareboat charterer, who has assumed responsibility for the operation of the ship from the owner." The person who takes these responsibilities, has the responsibilities imposed by the regulations. These include:

- making sure that the crew joining a ship have proper certificates;
- that ships are manned safely according to the flag state manning requirements;
- maintaining detailed records of all seafarers;
- familiarisation training which must be provided to all seafarers on board;
- effective co-ordination among seafarers during emergencies is to be effective;
- watchkeepers must be fit and adequately rested for duty.

3.2.8 Shipboard Familiarisation

The company is responsible to ensure that, when new personnel first join a ship, they are familiarised and trained in the use of the equipment, practice in the operating procedures, and other relevant basic training before they perform their normal duties.

The regulation A-1/14 requires the company to provide written instructions to the Master of each ship, outlining the procedures taken to familiarise and train the new crew in a language they understand.

3.2.9 On-board Training and Co-ordination

The Master is responsible to carry out the company's instructions in accordance with the regulations on board ships. These include:

- identifying the new crew before issuing out their duties;
- ensuring that the new crew are acquainted with the location, controls and the behaviour of the equipment they will be operating;
- ensuring that they operate the equipment correctly under supervision;
- they are given the opportunity to ask questions, if in doubt.

Shipboard familiarisation training plans should be prepared by the Master. The regulation further states that before being assigned shipboard duties, apart from the passengers, all seafarers shall have received approved training to familiarise them in personal survival techniques in order to know what to do in an emergency. Masters must post a schedule of watches for the personnel concerned. Records of hours of work and hours of rest are required to be kept, as these may be subject to periodic inspections by port state authorities.

3.2.10 Fitness for Duty and Rest Periods

Provision A-8/1 of the revised Convention states that flag States must enforce mandatory minimum rest periods to be taken by officers and ratings, forming part of a watch in order to prevent fatigue. Guidance in the STCW Code recommends masters to take account of the following:

- the maximum average working hours over a specific period should not exceed 12 hours per day;
- preventing fatigue from building up over a period of time; the length of the leave periods and the frequency should be given consideration;
- that provisions may vary from ship to ship, but the safety arrangements must be put in place.

These conditions apply both to deck and engine room watches, whether the ship is at sea, in port, moored or anchored.

One may ask who will be responsible to monitor the working hours of each watchkeeper or his assistants to ensure that they do not work beyond the required time limit? What would happen in the case of emergencies if all hands were required to attend to them, everyone including the watchkeepers having worked beyond his normal hours and afterwards the vessel continued en-route, when everything had returned to normal? How does one evaluate or what are the criteria used to find out if someone is incapable of taking his watch because of fatigue?

Fitness for duty, medical fitness, proper working experience, quality and thoroughness in training are valuable qualities that one should possess to minimise fatigue.

3.2.11 Special Training for Personnel on Certain Types of Ships

In regard to the requirements specified under this subject in Chapters 5 and 6 of the STCW Code, maritime institutions have to make provisions such that their procedures and processes meet all the requirements stated therein. These are listed below:

- what shore based fire-fighting courses have been approved under Chapter V/1?

- what types of seagoing service have been approved as suitable for acquiring adequate knowledge of safe operational practice?
- have we approved any tanker safety or familiarisation courses?
- what prior experience is required of personnel assigned immediate responsibility for loading, discharging, care in transit or handling of cargo in each type of tanker?
- have the specialised training programmes approved for each type of tanker?
- what type of certificates and endorsements have been approved for issue under Chapter V/1?
- have the arrangements regarding the issue, recording and reporting of such certificates and endorsements made?

Regarding Chapter V/2:

- what decisions have been made in relation to the application of Chapter V/2, that is the requirements to ro-ro passenger ships engaged on coastal or domestic voyages?
- what arrangements have been made to ensure that the appropriate documentary evidence of training completed under Chapter V/2 is issued and recorded?
- under section A-VI/1 of the code, what familiarisation training or instructions have been approved?
- what arrangements have been made to ensure that appropriate documentary evidence of training completed under Chapter V/2 is issued and recorded?
- have provisions for familiarisation training or instruction as approved under section A-VI/1, 2.1 been put in place?
- in tables A-VI/1-1 to A-VI/1-4, what arrangements have been made regarding the form and issue of evidence to seafarers who have achieved the standard of competence?

- to those seafarers exempted from any section A-VI/1 requirements what is our policy regarding exemptions from basic training, and the issue of evidence?
- pertaining to Chapter VI, what seagoing service, training courses and training programmes have been approved for seafarers that have to be proficient in survival craft and rescue boats other than fast rescue boats?
- under section VI/3 what documentary evidence or special certificate is to be used to our seafarers who complete training in advanced fire-fighting and are not being issued a certificate which includes the training and its qualifications?
- to address Chapter VI/4, in relation to our seafarers who achieve the required standard of proficiency in medical first aid, what special documentary evidence or special certificate is to be issued?
- what documentary evidence or special certificate is to be issued to our seafarers who achieve the required standard of proficiency for persons in charge of medical care on board ship?

3.3 New Training, Assessment and Certification Processes

A candidate for certification as an officer in charge of a watch, should have completed a planned and structured programme of training, showing the objectives of each stage of training onboard and ashore.
In co-operation with the education authorities, maritime institutions and the companies, governments should see to it that all training under the amended Convention is monitored, evaluated and supported by appropriately qualified personnel and conforms to meet the requirements. This is an enormous task which would need tolerance, understanding and co-operation of all concerned.

As from February 1, 1997 these requirements also apply to:

- training and assessment for ratings forming part of a watch on ro-ro ships

- emergency, occupational safety, medical care and survival function
- the issue of alternative certificates

These will also apply to the revision of the training programmes, courses and other training assessment activities for certification under the revised Convention as Master, officer or radio operator. The revised standards may look similar to the older version in the knowledge required. The most obvious change is the mandatory education and training that is required for all certificates.

From February 1, 2002 all candidates will be required to complete all the approved education and training courses including seagoing, which forms part of their approved programme, before they can be accepted for examinations. At present some Administrations allow candidates to sit for deck officer examinations, without completing an approved education and training programme. Candidates for deck officers only may be accepted for direct examination if they commenced their approved seagoing service before August 1, 1998. All these direct examination systems must be phased out by February 1, 2002.

All existing education and training programmes must be revised and courses designed to meet the 1978 requirements to ensure that the skill and competency objectives of the revised STCW Code are achieved.

3.3.1 Simulator Training

The use of simulators for training and assessment purposes has been recognised. As stated by Professor Peter Muirhead (1996f), simulator training in general means, "looking at the systematic development of skill behaviour which is required by an individual to adequately perform a series of tasks

or functions for the job. In other words skill acquisition through effective simulation training, constitutes the learning process."

3.3.2 Simulation Training Advantages

Simulation training is necessary in MET, since it facilitates realistic environment which can be artificially manipulated to supplement seafarers training. The major advantages of simulation training are:

a. The Imitation is Realistic

Operations which are conducted on ships are very complex and involves such activities as:

- ship manoeuvring
- ship handling
- cargo handling
- paralleling of generators
- boiler operation
- refrigeration and air conditioning
- main propulsion and auxiliaries

Simulator training on the above activities allow these operations to be practised and the required skill or competence is achieved without any actual risk or serious damage to the equipment or the environment. This method of training provides 'hands on' training in realistic imitation of the real world. The training system is economical, safe and efficient.

b. The Training is Cost Effective

Personal computer (PC) based simulation is developing rapidly, which means that the cost of simulation, hard and soft wares and maintenance can be significantly reduced. The availability of computer technology enables high quality imitation to be produced and more cost effective utilisation.

Although PC-based simulation does not meet all seafarers' training requirements, nevertheless, its utilisation will spread under the development of computer hard and soft ware. In actual fact , simulator-based training is effective and convenient because it resembles shipboard practices in a lot of cases. It also allows the students to acquire valuable experience in a short period of time while repeating the exercises when necessary. Thus, simulator training is convenient, safe, realistic, cost effective and permits operational practices without risks.

3.3.3 Types of Simulators

The three main types of simulators that may be used for MET institutions are, the bridge, engine room and cargo handling simulators. These may be classified into four major categories:

Full mission: capable of simulating total environment.
Multi- task: capable of simulating near total environment.
Limited task: capable of simulating limited tasks only.
Special task: capable of simulating particular or limited operations only.

It may be stated that simulator training will never replace hands-on or real ship experience, but it can speed up the acquisition of knowledge and skill and the ability to perform the needed task to the level that is required.

When making provisions for the training and the assessment of the trainees under the Convention, governments must take into account all simulator training assessment and demonstrations of proficiency requirements and ensure compliance with relevant performance standards and requirements in the use of simulators.

From February 1, 1997, the use of radar and automatic radar plotting aids simulators will become mandatory. If simulator training contributes towards the issue of certificates of competency, then it will become mandatory as well. What one fails to understand is that, if the mentioned simulators are mandatory, why not include the engine room simulator? Is it not as important as the other two types? After all, the equipment plays a vital role in the training of engine room seafarers.
It is the responsibility of the Parties to ensure that the training, certification and other procedures in simulator training are continuously monitored by means of quality assurance system.

3.3.4 Summary

Effective simulator based training may be summarised to rely upon several major factors, namely:

- the development of specific training objectives;
- the selection of the relevant tasks to the training purposes and the on board operational skills that are required;
- the trainees effective briefing and debriefing;
- the need for the instructor to ensure that the pre-briefing, control, monitoring and de-briefing exercises are understood and effectively used;
- the provision of a relevant simulator operating environment that is compatible to the selected goals and objectives of the training tasks;

3.3.5 Evidence of Compliance

The revised Convention requires Governments to submit evidence to IMO if they have complied with the requirements. A group of experts and the Maritime Safety Committee (MSC) will examine and evaluate the reports before publishing a 'white list' of Administrations that have met the requirements of the amended Convention or have provided sufficient information on their training, examination and certification systems to satisfy these requirements.

A register of certificates, endorsements and other documents that are issued is required to be maintained by all Administrations.

3.4 Quality Standards

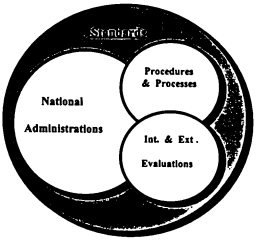


Figure 3.1

3.4.1 Introduction

'Quality,' as expressed by Professor Danny Waters means: "Fitness for purpose." National administrations should have quality standard systems in their organisations as required in the new Convention. Each organisation should develop, establish,

document, implement and maintain a quality system, whereby its stated policies and objectives for service quality may be accomplished.
Section A-I/12-I/15 of the STCW Code outlines the need to express quality and how it will be applied. These provisions imply that a government must state clearly its quality policies and that it is responsible for the quality procedures and processes of the agencies under its control.
Quality standards in institutions is explained in Chapter 4.

3.4.2 Control and Assurance

The structure of the quality system elements should be such as to establish sufficient control and assurance over all operational procedures and processes affecting services being executed. To avoid the likeliness of problems from occurring while not sacrificing the ability to and correct failures should they occur, the quality system should emphasise preventive and corrective measures.

3.4.3 Areas of Application

The quality standards system applies to all STCW education, training, assessment, certification process, endorsements, revalidation purposes, as well as the qualifications of instructors and assessors.
The requirement also affects the activities concerning the endorsements of certificates under the Transitional Provisions in regulation I/15, that is, seafarers that had started an approved training programme before August 1, 1998.

Transitional Provision I/15 states that:

1. "all training, assessment of competence, certification, endorsements and revalidation activities carried out by non-governmental agencies or entities under

its authority are to be continuously monitored through a quality standards system to ensure achievement of the defined objectives, including those concerning the qualifications and experience of instructors and assessors.

2. 'where governmental agencies or entities perform such activities, there shall be a quality standards system.'

3.4.4 Quality System Structure

The quality standards system of an Administration should include four particular elements, namely;

- Documentation process
- Procedures and processes
- Internal quality review
- External evaluation

3.4.5 Documentation Process

The requirements and provisions contained in the quality system should be defined and documented as a part of the organisation's overall document, which should include:

a. Quality Manual:

This should describe the quality system and should contain:

- the organisations' policies, do they meet the STCW standards and requirements?
- the objectives, does the established system achieve the objectives set. The procedures, processes and the confidence that are in place, do they allow the organisation to demonstrate this?

- the structure of the organisation, including the lines of responsibility, and the monitoring the standards once they are established.
- the description of the quality system, including the main organs and the provisions that form part of the whole, such as, education , training, endorsement and revalidation of certificates.
- the quality practices of the organisation
- the structure and distribution of the quality system documentation.

b. Quality Plan:

The established plan should describe the specific quality practices, resources and the correct order of activities which are related to the services being executed.

c. Procedures:

These written statements outline explicitly the purpose and scope of activities that are carried out. The procedures also specify the activities that are conducted controlled and recorded. Personnel that are involved in the operation should agree to, understand and be accessible to the procedures. The following are some of the activities that are required to be accomplished:

Has the administration:

- approved the revised forms of certificates and endorsements?
- clearly defined the near coastal voyage limits for reporting to IMO?
- authorised port state control officers under article X and revised their instructions?
- established investigation and enforcement measures and procedures?
- made the STCW training and assessments comply with Section-I/6?

Ensured that:

- the quality standards are in place by February 1, 1997?
- the plans for independent evaluation are in place by then?
- we have compared our STCW 78 certificate standards with STCW 95 standards?
- established the structure of refresher and upgrading courses for all seafarers?

d. Quality Records.

These records facilitate information:

- on how the quality objectives are achieved.
- on the degree of the satisfaction of the customer by the services offered.
- about the quality system results and the need to review or improve the services.
- on the need to analyse and identify quality trends.
- on how to correct or make the system more effective.
- on the competence of the personnel and the need for retraining.

The quality records should be verified for validity, readily available when required, retained for as long as it is needed and protected against damage, loss or deterioration.

3.4.6 Documentation Measures

The documentation is to be clear and legible, readily identifiable, dated and to be authorised by responsible personnel. Methods should be established to control the issue, distribution and revision of documents. The methods should ensure that the documents are:

- approved by authorised personnel,
- made available where the information is required,
- understood and accepted by the users,
- revised when necessary and
- to be removed when no longer useful.

3.4.7 Internal Evaluation

The internal quality review is a key factor in a quality system and should be performed to verify the effectiveness and the implementation of the quality system. Does the system adhere to service, service delivery and quality control specifications? The internal audit should cover all aspects of the administrations activities, for example, the certification system.

Table: 3.3

The administration should:

- establish record system of the issue of certificates and endorsements.
- provide information to other parties as requested.
- establish standards of medical fitness.
- ensure that inspection and control procedures are more stringent.
- ensure the extent of refresher and upgrading training are determined.
- ensure companies comply with regulation I/14 and the Codes.

Source: (P. Muirhead, 1996a)

Internal quality evaluation should be planned, performed and recorded as per procedures in the documentation. The task should be executed by competent personnel independent of the area being evaluated. During the audit assessments will be made of the administration's objectives that have been established. As part of the policy, are the standards of the STCW requirements met? A record of compliance or non-compliance will be documented and submitted by the evaluation team to the management. The evaluation should conclude with a post-audit meeting in which a summary of the findings is formally presented to the management. The management should ensure that all necessary and appropriate corrective actions are taken in respect of the findings. Audit reports must be reviewed periodically.

3.4.8 External Evaluation

Table: 3.4

The STCW Code requires Parties to verify that:
• all management controls, monitoring measures and follow up actions to comply with the current arrangements and procedures; do the procedures and processes that are in place meet the objectives?
• the method of measuring the standards is effective to achieve the objectives.
• the result of the audit is documented, and made available to responsible personnel in the evaluated area.
• if weaknesses do arise, timely actions is necessary to correct deficiencies; this is designed to help achieve standards.

Source: STCW Code, (1995 page 18.)

The external or independent evaluation needs to find out whether the functions, procedures and processes that are in place have flaws or weaknesses. This has to be identified and then remedial actions are taken. These arrangements are to be implemented effectively and should be suitable to achieve the established objectives. A list of specific areas to be audited should be supplied. The qualifications of the auditors must be clearly laid down.

The purpose of the external evaluation is to review and verify the effectiveness of an Administration systems and procedures; this is to ensure that the quality standards meet the necessary requirements. At least every five years, the whole system should be subjected to external or independent evaluation.

3.5 Standards in the Forum Island States

The national administration in Fiji, similarly the regional states, must clearly define its training objectives, all related standards of competence and identify the levels of knowledge, understanding and skill appropriate to the examinations and assessments required under the revised Convention.

Neither the STCW Convention nor the SPMC has any legal standing except where a nation has passed the legislation which stipulates the provision of the document(s) or reiterates the document(s) as the law of the nation. Not all the Forum members have legally endorsed the SPMC, although they may accept the certification provisions and the required standards of the document. Some Forum nations have not acceded to the STCW Convention.

Table: 3.5

Forum Islands States that have acceded to the STCW Convention

Countries	Date of accession to the STCW Convention
Fiji	27 June 1992
Kiribati	05 November 1987
Marshall Islands	25 July 1989
Papua New Guinea	28 January 1992
Western Samoa	24 August 1993
Solomon Islands	01 September 1994
Tuvalu	22 November 1985
Vanuatu	22 July 1991

Source : IMO (1994)

3.5.1 Importance of Quality Standards

Quality standards are vital as they provide international and regional minimum standards of education, training, examination and certification of those responsible for the operation of ships at sea. International standards are required to ensure that vessels of one nation operating in the waters of another nation are manned by personnel who are considered internationally as being competent to operate the vessels. This will further enhance the theme of IMO, 'safer shipping and cleaner environment.'

If there are no regional or international standards, there would be no control over the quality of those operating vessels under another flag state. In this regard, there is

nothing to prevent each forum nation in the Pacific from exceeding other nation's standards, either in quality or quantity of the training and education, skill or competence acquisition required regionally or internationally.

3.5.2 Meeting the Standards

The process of meeting the quality standard requirements is no easy task, as it has to be in place by February 1, 1997, except for any education and training which is deferred under the transitional provisions of regulation I/15. When a Party recognises a certificate or document of another Party, the former has to define its education and training objectives and standards and then identify the levels of knowledge required in order to comply with regulation I/10, that the Convention requirements are met.

As from February 1, 1997 the forum nations must ensure that all training, competence assessment, certification, endorsements and revalidation activities are continuously monitored through a quality standards system; this has to be evaluated at least once every five years. The same applies no matter what authority, agency, institution, company or person performs such functions; whether they are conducted on board ships or ashore. This requirement also applies to such activities as the issue, endorsement and revalidation of certificates under the transitional provisions.
All information on independent evaluation of quality standards is to be communicated to IMO within six months of completion.

3.6 Current Problems in the Regional States

As the quality standards requirement is to be established by the forum nations by February 1, 1997 this requires commitment and dedication and hard work from each nation.

Considering the short time available; this will create some difficulties, among which are:

- each administration will find difficulty in correctly interpreting the requirements of the revised Convention. It was realised at the STCW Inter-Sessional Working Group (ISWG) meeting at IMO headquarters (June 10-14, 1996), that it was not an easy task for the states' representatives to agree to or to reach a consensus on several issues, due to different interpretations of the STCW requirements.

- What something means to some, may not necessarily mean the same thing to others. This is true in the forum island states due to different maritime backgrounds, the national education system, culture and social aspects.

- there is disparity in the quality of training among the institutions in the island countries. One of the major reasons is the inadequacy of government support to maritime education. This leaves the function in some cases, almost entirely to the private sector.

- to compound the problem there is a lack of qualified instructors for specific maritime courses and the absence of appropriate and updated training resources. Most people in some nations are not fully aware of the requirements of the 1978 Convention, as they have not acceded to the Convention.(refer to figure 2.1) The extra task of the revised Convention is a further burden on their shoulders.

- an extension to the date to have these arrangements in place would be favoured by most nations. This would ensure that most, if not all, the requirements are met.

- lack of funding is always a major barrier in any development in these countries; the source of this should be identified immediately. Administrations may face difficulties to convince the governments to allocate the necessary financial resources to meet the quality standards of the new Convention. This also includes the acquisition of simulators.

- the Forum Secretariat should co-ordinate and convene seminars and workshops, whereby the representatives from relevant organisations in the forum states are represented to iron out these differences. Consultants from IMO should be engaged in these meetings to render their expertise and valuable advice.

3.7 Implementation

A vital aspect of the revised Convention is that it introduces measures which have been designed to ensure that the new standards of competence and requirements it contains will be uniformly implemented globally when they enter into force.
A number of controls have been adopted to ensure that on the one hand the maritime industry will effectively implement them, and on the other the governments will enforce these measures. These controls are likely to overlap in some instances.

3.7.1 Penalties

Regulation 1/5 Section (4, 5) addresses the responsibilities of the companies, requiring the governments to enforce these measures on shipping companies and individuals found in breach of the Convention requirements by issuing penalties.

Table: 3.6

Penalties .....shall be prescribed and enforced in cases when:

.1 a company or a master has engaged a person not holding a certificate required by the Convention;
.2 a master has allowed any function or service in any capacity required by these regulations to be performed by a person holding an appropriate certificate, to be performed by a person not holding the required certificate, a valid dispensation or having documentary proof ***(that an application has been made for a flag state endorsement of a certificate issued by another government);***
.3 a person has obtained by fraud or forged documents an engagement to perform any function or serve in any capacity required by these regulations to be performed or filled by a person holding a certificate or dispensation.

Source: Regulation 1/5 STCW Convention (1995)

- Regulation A-1/4 requires port state control to verify the qualifications and competence of seafarers, including flag State endorsements of certificates issued by countries other than the Flag State or evidence that applications for such endorsements have been made.

In cases of a ship being involved in a collision, grounding or stranding or there has been a discharge of illegal substance from a ship or it has been manoeuvred in an erratic or unsafe manner to pose a threat to persons, property or the environment, port state control inspectors are entitled to undertake assessment of the seafarers' abilities and competence.

3.7.2 Government Responsibilities

Parties are to ensure that effective implementation of the Convention is carried out and should cover the following items:

- documentary evidence of compliance with the standards of the Convention to be communicated to IMO.
- training and certification processes to incorporate quality standards and subjected to independent evaluation to be demonstrated.
- flag states to be responsible for checking the competence of foreign seafarers serving on their ships who hold certificates issued by another state.
- the flag states also have an obligation in relation to foreign seafarers serving on their ships. They may require to issue either their own certificates to foreign seafarers or individual endorsements of foreign seafarers' certificates.
- governments to ensure that all facets of their education, training and certification processes are subject to independent evaluation, on regular basis. All details of the evaluation and qualifications of the evaluator(s) are to be communicated to IMO as part of the documentary evidence of compliance.

QUALITY STANDARDS

(Links and Interactions)

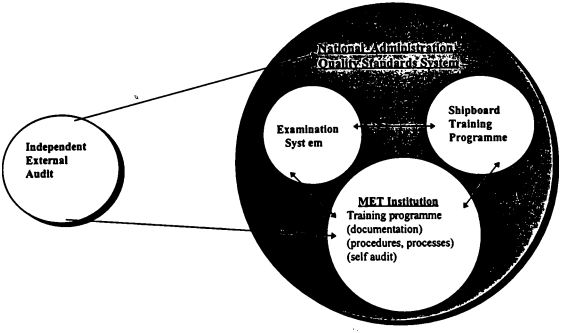


Figure 3.2 : Modified from P. Muirhead's paper. IMLA Conference 1996.

CHAPTER 4 : IMPACT ON REGIONAL MARITIME ACTIVITIES

4.1 The Shortcomings of the Existing South Pacific Maritime Code versus the STCW Convention and Amendments.

Most maritime personnel in the South Pacific regional states would agree that the SPMC has deficiencies, is weak and out of date since, apart from other issues, it does not secure or enhance the highest practical standards for seafarers. The major areas that the Code is deficient in appears to be that it:

- does not precisely define standards required of officers on the watch and others with responsibilities;
- does not reflect current working practices;
- lacks effective enforcement and implementation;
- quality standards of the main elements are not addressed.

4.1.1 Syllabus Format

The wording of the syllabus should be in the 'objective format,' the objective format defines what must be done, how it is to be done, the standard it must be done to, the time it must be done in and other limitations and conditions.

The syllabus is worded, 'an understanding of ','a knowledge of ', 'ability to' thus leaving itself open for different interpretations because it gives no indication as to what level or depth of knowledge is required. This is similar to 'the principle underlying the working of internal combustion engines' - it does not specify what levels of skill are required to be achieved. The method and also the standard of teaching and examination are open wide for interpretation. The candidate is likely to be on the losing end, if co-operation and understanding is non-existent between the trainer and the examiner.

4.1.2 Training, Certification and Quality Controls

The SPMC states that seafarers must be competent for certification. It fails to indicate the requires standard of competence or skill acquisition they must possess nor does it have provisions for independent evaluation. The STCW Convention stipulates in detail the minimum standards of competence that must be achieved by Parties in order to meet the requirements. It also contains the standards of competence required to be demonstrated by candidates for the issue and the revalidation of certificates of competency.
Issues such as control and quality of teaching and training activities, the qualification and the experience of instructors and assessors, the activities necessary for effective quality control, planned and systematic quality assurance, reviews and periodic independent evaluation are also addressed.

The instructors and the examiners should be trained to be competent in their work and are required to keep their knowledge in line with current practices and also have relevant professional experience.

Disregarding the passengers, all crew will have to receive familiarisation instructions and be able to respond effectively in emergencies. Apart from the conventional basic

safety training requirements, crews are to have received basic instruction in safety and pollution prevention duties, personal safety and social responsibilities.

4.1.3 Functional Approach

Functional approach refers to any task done on board a ship, duty or responsibility, or a group of closely related tasks, duties or responsibilities, essential to safe operational practices, safety of life and property at sea or the protection of the marine environment.

The SPMC does not have provisions for, or clear distinctions between, the responsibilities of the seafarer. In the revised Convention the responsibilities, duties and tasks that are performed onboard are termed shipboard *functions* and the three levels of responsibilities are:

- ***management level;***
- ***operational level;***
- ***support level***. -these functions are further explained in Section 4.4.3.

The functional approach specifies clearly the skill, abilities and the responsibilities that the SPMC does not.

4.1.4 Implementation and Enforcement

Another major weakness of the SPMC is the lack of implementation and enforcement by the regional nations. This is probably due to their Administrations not enacting the Code in their legislation to become the law of their nations. The Code is just a guideline 'to make do' in their training, manning and certification systems.

The revised Convention requires Parties to enforce penalties or disciplinary measures for failing to comply with the provisions. The means for ensuring that the provisions

are properly and effectively implemented, the procedures to investigate incompetence or acts that threaten the general safety and the environment, and also the withdrawal, suspension, cancellations of certificates of competency, should be established.

4.2 The Need for a Revised South Pacific Maritime Code

Since the STCW Convention entered into force in 1978, it has been amended three times in order to address various maritime issues. The first instance was in 1991 with respect to its Radio Communication Provisions, again in 1994 with respect to its Special Requirements for Personnel Serving on Tankers, and the latest one in July 1995 with the revised Convention amendments.

Since its inception in 1986, the SPMC has not been revised, although it is found to be lacking in some major areas as compared to the STCW Convention. Some of the changes needed are:

- the syllabus needs to be reworded in the 'objective format;'
- provisions to be included for the forum island nations to enact the Code in their national legislation;
- provisions to ensure that the Code is applied uniformly and impose strict obligations on the island nations regarding implementation and enforcement;
- minimum standards of competence to be incorporated to include the specific area of competence, the required knowledge, understanding and proficiency, the criteria for demonstrating and evaluating competence. The functions and the levels of responsibilities should be included;
- regulations requiring instructors and examiners to be competent and appropriately qualified to be formulated;
- training activities to be monitored regularly for quality and to be evaluated periodically by an external assessor.

4.3 Impact on the Infrastructure, Qualification and the Experience of Instructors and Assessors.

The impact of the above is highlighted below:

4.3.1 Legislation

Each nation may develop and enforce its own legislation if it so wishes. To develop marine legislation is an enormous, laborious and time consuming task which requires competent personnel and other resources which are usually in short supply in the regional states. Even if such legislation is developed it may take a long time before it is enacted to become national law, because maritime issues are usually considered to be of low priority.

There is an urgent need for the regional states to develop their own legislation or develop a standard legislation for the region immediately, to incorporate all the provisions of the STCW Convention amendments in their national laws to meet the deadline of enforcement on February 1, 1997.

The department or the body responsible for administering the convention should be given the administrative and regulatory authority to see this task through. If confusion, dispute or lack of clarity exists as to who is in charge, then it could end up that nobody is in charge or responsible.

A vast majority of shipowners are highly motivated and dedicated to maintain their ships to high standards, while some are not and often seek to make economic gains at the expense of safety. Others deliberately move their ships to different trading routes if states introduce strict legislation and controls. They would prefer to risk losing the

ship, the crew and the cargo on board rather than carrying out improvements and maintenance on their ships to meet the requirements.

This sort of callous and irresponsible behaviour leaves a lot to be desired. An appropriate solution to this is to apply a uniform legislation throughout the region to curb these types of acts. By taking such actions the shipowner will not have a lot of alternatives but to meet the Convention's requirements.

4.3.2 Upgrading Training Facilities

Some of the training institutions in the region are well equipped for the programmes they are offering at present, while others are not. The standard, quality, quantity, and the type of hands-on equipment, training aids and other resources that are available are suitable only for particular programmes. It would be a waste of resources if all the training institutions were to procure and upgrade their equipment to meet the new standards.

To effectively address the requirements of the revised Convention, it would be worthwhile to purchase modern and expensive equipment such as simulators on a regional basis, and the same supplied to the regional maritime institutions in Fiji, Papua New Guinea and the Solomon Islands. Students from the other maritime institutions could be sent to these three institutions to fulfil their training needs.

Most, if not all, regional states depend on donor agencies for training structures and equipment needs. It would add weight and substance to their requests if the identification and the purchase of these were done on regional grounds. The training structures and equipment needed must be determined, the donor nations who will sponsor the purchase and provide the equipment and/or structures to the designated states should be found, and the designated facilities built and/or provided.

4.3.3 Training Programmes

It would be in the best interest of the island states if they pooled their resources and developed syllabi, programme objectives, lesson plans, training aids and other materials to meet the requirements of the amended Convention, instead of wasting resources and duplicating efforts as is the current trend. The uniform standard or the programme developed should exceed the SPMC and the revised STCW Convention. This will raise the standard in each institution to a 'level playing field'. The reviewed programme would set out the conditions for the programme, the facilities, equipment, material, teaching aid and would specify how these would be utilised. This programme could be drawn up in similar guidelines as the IMO model courses.
A reviewing process should be established to update each programme to ensure that the requirements of the industry and the legislation are met.

4.3.4 Qualification of Instructors

Not every instructor has the skill and the talents to develop terminal objectives, lesson plans, course materials and training aids. Some instructors are good at some areas but not at others. While some have been trained in how to perform these tasks, others have not and have developed their own styles and methods that may or may not be suitable or ideal.

Instructors should be given every opportunity to attend and get qualified in adult education and training, which should cover development and design of basic courses, setting objectives, developing materials, training aids, making lesson plans, setting and marking examinations, material delivery or presentation and techniques, workshop and seminar programming.

Most maritime institutions have difficulties in attracting qualified and competent personnel and at the same time to retain them. This shortage has been attributed to low salary and unattractive working conditions as compared to private enterprises, other government departments and shipboard jobs.

Each nation in the forum states could address this issue by ensuring that the instructors are offered a salary structure and working conditions that are attractive or in line with the current living conditions. These should be reviewed regularly, in order to satisfy the basic needs of those concerned.
These institutions should not be used as stepping stones to better positions, by having the institutions pay for personal and upgrading courses. The cost of the training is left with the colleges, but not the skill, experience and expertise, as the instructor takes it with him when he leaves. The governments should find solutions to this rather than down grading the image of the colleges and the quality of the product in a highly competitive market.

4.3.5 Qualification of Assessors

It is highlighted that some of the assessors in the regional nations are not qualified, or experienced, nor do they have expertise in the work they are executing. Some of these personnel have not had formal training in test preparation or in the conduct of examinations. How can one effectively evaluate the competency and the proficiency of the students if one is incompetent to carry out the tasks required? If the students are required to be competent, why not their assessors?

The revised Convention requires the instructors and assessors to be qualified for the specific tasks for which the training and assessment is being conducted. For training and assessing students' competence, some of the major areas of consideration are

knowledge, understanding, proficiency, methods of demonstrating competence and the criteria for evaluating competence.

It is essential therefore, that instructors and assessors who are under-qualified or incompetent should have appropriate training in their respective fields, such as refresher or upgrading courses, in order to fulfil the requirements of the revised Convention.

4.4 Uniform Standards of Competence

A significant feature of the revised STCW Convention is the establishment of the precise standards of competence which relate to the actual ability or competence of the seafarers to perform their tasks safely and effectively; this is a further advance from the current Convention.

The current Convention only stipulates knowledge requirements, which leaves the standards of competence to be determined by Parties.

It is believed that if these measurable standards are fully implemented, they would be more readily enforced internationally. This would reduce the different interpretation of the STCW requirements by Parties, leading to the placing of increased reliance on STCW certificates.

4.4.1 Application of the Rules and Standards

A few problems may arise with international requirements, rules and standards. Probably an analogy in sports may explain this. A sport establishes its rules which all must abide by regardless of the players skill at the game. The professionals and the world champions play the game at different skill levels to those at college team level, but the rules and the regulations under which they play are the same.

The existence of standards does not imply or guarantee any quality assurance, as it is left to the authority of each state to establish its own level of skill, knowiedge and ability.
The skill or the competence level will only increase across the board or uniformly, if a higher standard is required of, and insisted by, everyone.

4.4.2 Competence in the Forum Islands Nations

In Fiji and the Forum island nations, the skill or competence level can be improved by quality education and training programmes, quality assessment and evaluation processes to be applied uniformly. Uniform lesson plans, materials, supplies and other resources would provide consistent standards in the regional states. These standards should be subjected to regular external evaluation at no more than five year intervals.

4.4.3 Training Outcomes

The 1995 revised Convention places more emphasis on the training outcomes, that is, the seafarer's ability to carry out his duties competently, irrespective of the content or the length of training required. This principle, in accordance with Section A-11/1, regulation 11/1 and B-11/1 of the Code, reflects newly adopted education, training and shipboard service requirements; in particular, the importance of on board training.

4.4.4 On Board Training

The current Convention does not set standards regarding shipboard service training quality, but requires long periods of seagoing service. It allows for the reductions in

the duration of time spent at sea if evidence provides a structured on board training programme.

The revised Convention specifies an irreducible minimum sea going service that must satisfy certain standards. For example, deck candidates for certification as navigational watchkeepers will require 12 months seagoing service, including 6 months supervised bridge watchkeeping. They have to follow a structured programme approved by the government to ensure that trainees actually practice and demonstrate their competence to perform the particular task and duties that will be required of them when they are qualified. Three years seagoing service is required, if a structured on board service is not followed.

For engineer watchkeepers 6 months sea service is required in the engine department. This will include workshop training and skill acquisition which is part of the 30 months education and training approved by the government. The deck and engineer officers should have their approved sea service recorded in a training record book.

4.4.5 Development of Competence

Competence for the tasks, duties and responsibilities that are performed on board ships have been grouped to form self contained shipboard 'functions.' These functions identify more distinct groups of skill, abilities and responsibilities than those established by the conventional department divisions, which is the basis of the current Convention.

Seven functions define the standards of competence in the revised Convention:

- Navigation;
- Cargo handling and stowage;
- Controlling the operation of the ship and care for persons on board;
- Marine engineering;
- Electrical, electronic and control engineering;

- Maintenance and repair;
- Radio communication.

The standards of competence to be achieved for each of the functions are described at three levels of responsibility in the new Convention.

'Management level' means the level of responsibility associated with
> serving as master, chief mate, chief engineer officer or second engineer officer onboard seagoing ship'

'Operational level' means the level of responsibility associated with
> 'serving as officer in charge of a navigational watch or as designated duty engineer....or as radio operator'

'Support level' means the level of responsibility associated with
> 'performing the assigned tasks, duties and responsibilities ...under an individual serving in the operational or management level.'

The management level corresponds with the senior officers, the operational level with the junior officers and the support level with ratings. These levels apply both to engine and deck disciplines.

4.4.6 Standards of Competence Specifications

In the revised Convention, the standards of competence relate to the content and the outcome of the training. The standards are presented in the Competency tables in Part A of the STCW Code. The standards relate to competence which are grouped to form 'functions' at different levels of responsibility.

The table below is an example of the STCW Competency tables, which outlines the minimum standards of competence for the function of 'maintenance and repair at

management level.' The competence required is 'Organise safe maintenance and repair procedure'.

Specification of minimum standard of competence for chief engineer officers and second engineer officers on ships powered by main propulsion machinery of 3,000 kW propulsion power or more.

Table: 4.1

Function: Maintenance and repair at the management level.

Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Organise safe maintenance and repair procedure	Theoretical knowledge Marine engineering practice Practical knowledge Organising and carrying out safe maintenance and repair procedures	Examination and assessment of evidence obtained from one of the following : .1 approve in-service experience .2 approved training ship experience .3 approved workshop training	Maintenance activities are correctly planned and carried out in accordance with technical, legislative, safety and procedural specifications. Appropriate plans, specifications, materials and equipment are available for maintenance and repair
Detect and identify the cause of machinery malfunctions and correct the faults	Practical knowledge Detection of machinery malfunction, location of faults and action to prevent damage	Examination and assessment of evidence obtained from one or more of the following : .1 approved in-service experience .2 approved training ship experience .3 approved simulator training where appropriate	The methods of comparing actual operating conditions are in accordance with recommended practices and procedures Actions and decisions are in accordance with recommended operating specifications and limitations
Ensure safe working practices	Practical knowledge Safe working practices	Examination and assessment of evidence obtained from one or more of the following: .1 approved in-service experience .2 approved training ship experience	Working practice are in accordance with legislative requirements, codes of practice, permits to work and environmental concerns

Source : STCW Code (1995 page 86).

The current Convention only stipulates knowledge which is required by candidates for certification. The new Competence tables outline the criteria for each element of competence to be achieved. Referring to the table above, these criteria include:

- knowledge, understanding and proficiency;
- methods for demonstrating that competence has been achieved;
- criteria for evaluating the competence.

4.4.7 Methods of Demonstrating Competence

The methods of demonstrating competence will vary, in addition to using specific, relevant reference materials such as an electrical circuit diagram to trace an electrical fault. Other demonstrations include in-service training, training ship experience, laboratory equipment training and simulator training.

4.4.8 Training In-service and Assessment

Section A-1/6 of the STCW Code contains a new provision which requires instructors and assessors to be qualified for the specific tasks, in which the training and assessment is being conducted. Personnel serving on board such as junior officers with responsibility to supervise the completion of cadets' training record books are also affected by these provisions. These instructors and assessors should :

- appreciate the training programme;
- understand the specific training objectives for the particular type of training being conducted;
- be qualified in the task for which training is conducted.

4.4.9 Simulator Training

Extensive requirements and guidance regarding performance standards for simulators are contained in the revised Convention, such equipment in use before February 2002 may be exempted from such standards.
The use of radar and ARPA simulators in training and also the methods of demonstrating competence will become mandatory requirement for watchkeepers in the deck department.

4.4.10 Evaluating Competence

The STCW Code contains Competence Tables with specific criteria for evaluating competence which require the actual ability of the seafarer to perform or demonstrate his duties effectively.
For instance, in addition to absorbing the knowledge concerning the:

- "organisation of safe maintenance and repair procedures";
- "controlling trim and stability and stress", he is also required according to the evaluation criteria to;
- "monitor and control compliance with legislative requirements and measures" to ensure safety of life at sea and the protection of the marine environment.

4.5 Quality Assurance and Control

'Quality is simply meeting the customer's requirements', as defined by Oakland (1993, page 5), also expressed by Deming (1982, page 24) 'Quality should be aimed at the needs of the consumer, present and future', in other words it should conform to requirements.

Section A-1/8 of the STCW Code, cites quality standards with regard to:

- the Administration's structure, responsibilities, procedures, processes, monitoring and quality assurance;
- the organisations responsible for implementing education, training and assessment programmes with emphasis on skill and competence;
- the internal review process;
- the external audit or evaluation.

Concerning the issues from IMO, there are two aspects in particular which relate to the introduction of quality standards:

1. the expression " to the satisfaction of the Administration ", is open wide for different interpretations by Administrations, which often meant there was no quality and very few standards were implemented;
2. the 1978 Convention is based on knowledge and understanding as the criteria for competence. This is inadequate to measure competence.

Skill acquisition is now part of the competency examination, which the curriculum in institutions must demonstrate in order to set the quality standards process. This is a new and important addition to the Convention in ensuring quality standards internationally. Maritime institutions must have quality in their programmes and also the outcome which is the students.

Quality standards mean the organisation's procedures and processes, lines of responsibilities, and monitoring systems to ensure that standards are maintained once they are established to achieve these standards.

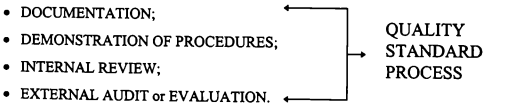
4.5.1 The Need for Quality Standards

The Maritime Education and Training (MET) institutions in the Forum Island Nations need to have internal and external quality evaluations to meet the national and international requirements, in order to:

- overcome the shortfall of course programmes, teaching and learning activities;
- make evaluations of the product's knowledge, skill and competence;
- make assessment of the staff qualifications and experience;
- improve the delivery methodology and techniques;
- enhance and maintain the quality standard requirements;
- upgrade the existing facilities, resources and equipment.

4.5.2 The Quality Standards Process

The revised STCW Convention addresses 4 (four) important elements pertaining to this subject, namely:



1. The documentation process - curricula will have to specify the courses' objectives, contents, methods of delivery and the means of assessment.

2. The demonstration of procedures and processes e.g. the conduct of examinations.

- what are the procedures laid down?

- how does one measure them for reliability and validity?
- who approves them?
- does anyone check them so that they relate to teaching programmes and teaching objectives?

3. Internal review process - the internal review is usually done by self evaluation which consists of committees or a review team.

4. Independent audit or evaluation - the external evaluator needs to see that the required standard is achieved by the institutions in compliance with the STCW requirements. The external evaluator could be an accreditation body, a standard approving body or a qualified auditor.

4.5.3 Institutions Quality Standard Requirements

The MET institutions in Fiji and the South Pacific Forum Nations are responsible for implementing these programmes in the region. They should apply quality standards to the activities carried out by their management and also the operational levels to show how they are managed, organised, undertaken and evaluated to ensure that the goals are achieved.

The School of Maritime Studies should account for a dynamic academic and organisational structure, responsibilities, procedures, processes and the resources of the staff and equipment.

The Fiji Institute of Technology Academic Board, should perform the following functions:

- advise the Director on Academic matters;
- approve all institute's programmes and courses;

- maintain and sets academic standards e.g. rules, regulations, assessment and results;
- make final decisions on students progress, graduation and exclusions from the courses;
- act as sub-committee on quality standards, as it examines all documentation, procedures and processes.

The SMS should establish its Mission Statement which should state its policy to:

- provide education and training to students;
- meet the STCW Convention in its training programmes;
- implement and maintain continuously a quality standard system;
- have documented programmes and courses with clear objectives.

The SMS Examination Board should approve new and revised examination papers and results, appeals, rules and regulations. Links to the Marine Department examiners the shipping industry and the National Training Council should be established, so that they are represented in the board to add value and credibility.
The School's Course Committee should decide the entry standard requirements, the management of resources and personnel. Similarly a representative from the industry should be in the committee to get feedback and advice on various aspects of the industry.

It would be ideal if a Quality Standard Committee was set up at FIT to be chaired by the Academic Registrar, to have its members drawn from the various schools under FIT and a representative(s) from the National Training Council.

This committee would:

- review standards of the courses;
- set standards and documentation;

- advise on the need of changes of the courses;
- approve staff qualifications.

4.5.4 Internal Review Process

One of the most important aspects of quality standards is to set the terminal objectives of the programmes that are offered at the SMS, such as Mate or Engineer Certificates of Competency, to meet the requirements of the STCW Convention. They would then have to show that they meet the standards by having:

- specific procedures and processes in place to be actively used by personnel;
- procedures and processes to achieve the stated policies, programme aims and objectives at all levels;
- the mechanisms in the institutions to maintain and enhance these quality provisions.

The mechanism in the form of committees or boards should enhance quality standards relating to:

- entry standards;
- design and delivery of courses;
- teaching methodology;
- assessment and evaluations.

These bodies should:

- meet at regular intervals to monitor progress;
- discuss poor results and institute remedial action for improvement;
- monitor feedback from students, external examiners or accreditation body;

- involve representatives from the shipping companies and the National Training Council, as they are components of the overall organs leading to the issue of the certificates.

4.5.5 External Review or Independent Evaluation

Independent evaluation should be instituted at the SMS which would monitor measures and follow up actions with the current arrangements of the MET system.
A systematic and independent examination of the SMS system would determine whether the activities and the related results or outcomes comply with the planned arrangements that are in place such that:

- the arrangements implemented are effective;
- they are suitable to achieve the objectives.

The purpose of the external evaluation is to review and verify the effectiveness of an institution's procedures and processes, to ensure that it has the quality standards required. The focus will be on the programmes and the training provisions which lead to the issue of the Certificates of Competency by the National Authority. The evaluators will assess:

1. the Mission Statement if it contains matters on policy to meet the STCW Convention.

2. the academic training strategies, written programmes, teaching and training objectives.

- the development of new courses and the review of existing ones;
- the evaluation system which includes appeals and results;
- the feedback from the students and the industry, also their involvement in policies and procedures.

3. the use of facilities such as simulators for practical training, laboratories, workshops and other equipment.

- what are the criteria of assessing these organs?
- what teaching and practical resources are held?
- how will the competency requirements of the Code be met?

4. the organisational chart:
   - the administrative and academic lines of responsibility, communication, the roles of committees and boards.

5. the staff recruitment, staff profiles, qualifications and experience, their teaching roles, promotion, participation in research and development, the ratio of staff to students.

6. the student's background; what are the entry standards or qualifications?

- external servicing of courses:
  - what is the quality standard of the trainers, the facilities e.g. workshops, equipment?
- the feedback from the students and the industry and their involvement in the policies and procedures.

4.5.6 Information Required by the External Evaluator

The external auditor would need information on the institution's activities, background information, the institute's origins, recent developments, the staff and students, structures and equipment.

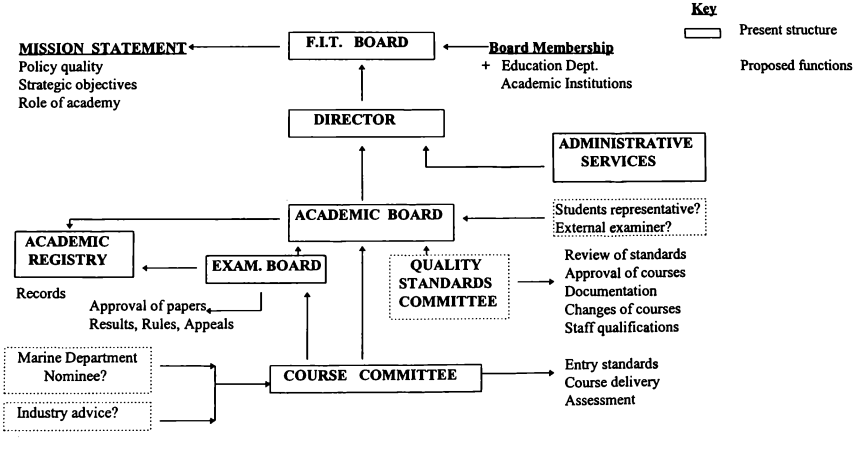
The team will ask for information beforehand or the detail of what they want. They will then decide on:

- whom to talk to;
- what questions they want to ask;
- whether they wish to interview some staff and students;
- how they will make assessment of the facilities e.g. classrooms, workshops, simulators, training vessels, other equipment to determine whether one complies with the requirements;
- the deficient areas and suggest the possible means to remedy these weaknesses and the opportunities to overcome them.

Their report will give a full, fair and accurate account of the SMS's quality standards and identify the strengths and weaknesses of the structure and processes. They will establish the methodology they use as independent evaluators and the documentation of the system they follow to examine the institute's systems.

The final report will then be compiled, and submitted to the institution to implement the changes to ensure that the quality standards are maintained. This evaluation has to be carried out at least once every five years.

F.I.T. STRUCTURE



Modified from: P. Muirhead lecture notes

Figure: 3.1

CHAPTER 5: THE IMPLEMENTATION OF THE REVISED CONVENTION

5.1 Introduction

The current Convention stipulates the minimum standards which are the obligation of the Parties to meet or exceed. In major maritime States, the standards are often higher than those prescribed in the Convention, while in others the standards are below the minimum. It has been claimed that the Convention is ineffective and unresponsive to the safety needs of the travelling public and the protection of the marine environment from accidental pollution.

The lack of safety afloat, as claimed by some sources, results in the accidents caused by human error. Human beings cause accidents. They cause them through very human character traits such as carelessness, sloppiness, ignorance, and poor judgement, and they are contributed to by bad training; an industrial culture that values excellence insufficiently.

Despite its global acceptance, it was realised that the Convention was not achieving its purpose, as it was losing credibility. The main reasons appeared to be the lack of precision in its standards and the failure of many Parties to interpret the standards correctly and then effectively administer and enforce the Convention requirements.

5.1.1 Package of Measures or Controls

The revised Convention introduces notable measures or controls which have been designed to ensure that the new standards of competence and other improvements contained therein will be implemented uniformly on a global scale, when it enters into force.

This 'well balanced package' of controls is being adopted to ensure that the industry will comply and more importantly, that the revised Convention will be effectively implemented and enforced by Parties and all those concerned. As there is not one single measure that will guarantee the implementation of the new requirements, these controls are likely to overlap.

5.2 Responsibilities of Companies

The revised Convention places new responsibilities on shipping companies to assist in implementing the amendments.

Table 5.1

These include ensuring that:

- seafarers hold appropriate certificates and the ship complies with the safe manning requirements of the Administration;
- documentation data on seafarers it employs are maintained and readily accessible including experience, training, medical fitness and competency in duties;
- seafarers on assignment are familiarised with the ship arrangements, installations, equipment, procedures and ship characteristics relevant to their duties;
- a ship's complement can effectively co-ordinate activities in emergencies and in performing functions vital to safety or pollution.

Source: P. Muirhead, (1996d)

When seafarers are assigned to ships, companies must keep and maintain detailed and accurate personnel records for each officer and rating.

5.2.1 Introductory On-board Training.

The company is responsible for ensuring that the newly employed crews have been given the opportunity to familiarise themselves with their new surroundings relating to their actual duties. This includes practical training in the use and operation of equipment or practice in the operating procedures or other introductory training relevant to their areas of responsibility.

Regulation 1/14 is specific in that, it requires companies to provide written instructions to masters of each ship outlining on board familiarisation training procedures and that all new employees are to receive this training in a language they understand.

5.2.2 Masters 'New' Duties

The master is also responsible for implementing the instructions of the company, as prescribed in the regulations. These responsibilities include:

- being responsible for the new crew on board;
- familiarising the new crew in their new environment;
- the initial training of these crew.

The initial training required will vary from ship to ship depending on the type of ship, the equipment involved, the experience of the crew and the voyage pattern.
The regulations state that all persons engaged on a seagoing ship, apart from the passengers, should have received an approved familiarisation training in personal

survival techniques or receive information and instructions to know their stations and duties in case of emergency, before being assigned to shipboard duties.

Table 5.2

On board familiarisation training involves a number of aspects, namely:

- be able to communicate with persons on board on safety matters and understand safety information symbols, signs and alarm signals.
- know what to do when: a person falls overboard, fire or smoke is detected, the fire or abandon ship alarm is sounded.
- identify muster and embarkation stations and emergency escape routes.
- locate and don life- jackets.
- raise the alarm and have basic knowledge of the use of portable fire extinguishers
- take immediate action upon encountering an accident or other medical emergency before seeking further medical assistance on board.
- operate the fire, weather tight and watertight doors fitted on the particular ship other than those for hull openings.

Source: Seaways (1995, page 10)

5.2.3 Schedule of Watches

Ship masters must put up a schedule of watches to be read and understood by those concerned. As flag administrations may require records of hours of work and rest of seafarers for periodic inspection, these records must be maintained and kept safely.

5.2.4 Structured Training Programme

Future candidates for certification as officer in charge of a watch, should have completed a planned and structured training programme. Such training should show

the objectives of each stage of training on board and ashore. During the operation of the ship, all seafarers with designated safety or pollution prevention duties are required to have mandatory basic safety training and instruction. Companies must ensure that, before a seafarer is sent to join a ship, he must have completed an approved basic training course. These courses comprise survival techniques, fire prevention and fire fighting, elementary first aid, personal safety and social responsibilities.

5.3 Responsibilities of Administrations

To re-establish the lost confidence in the STCW certificates, regardless of where they were issued, some important measures have been designed to ensure effective implementation of the Convention by governments.

Legislation of all mandatory provisions of the Convention such as articles, regulations and codes should be prepared immediately and incorporated in the national law. This is in regard particularly to training, assessment, issue, revalidation and endorsement of certificates.

As many provisions are inter-linked and closely related, the suggested approach is to incorporate the STCW texts in the national law, make the necessary adjustments to suit legislative framework and style; then specify near coastal voyage limits and other required national standards.

Governments must take all necessary action to give full and complete effect of the revised Convention as it enters into force on February 1, 1997.

5.3.1 Information to be Communicated to IMO.

Governments that issue STCW certificates will be required to submit detailed information and reports to IMO, which should include:

- legal and administrative measures that are enacted by Parties to comply with the Convention, in particular those relating to training, assessment and the issue of certificates;
- details of training courses, examinations and assessment systems;
- details of the procedures followed to approve the conduct of training and assessment nationally.

5.3.2 `White List`

A panel of experts appointed by IMO, including the Maritime Safety Committee (MSC), will scrutinise these reports before publishing a 'white list' of those countries who demonstrate that they meet all the requirements of the new Convention. For example, information on the training, examination and certification systems.

Table: 5.3

Some vital aspects that are worth noting are as follows:

- in instances that a government's name fails to appear on the named list, it does not necessarily mean that seafarers holding the certificates issued by that government are not competent. However:
- other governments, through their port state control inspectors could use the list to decide nationalities of crew or ships' flags to target for inspection purposes.
- flag states could decide on matters such as whether to recognise certificates issued by other governments for service by foreign seafarers on board their ships.

Source: Modified from ISF (1996 page 37)

Concern may be raised by major labour supplying countries, and to ensure that the supply for their seafarers does not dwindle, they should encourage the provision

concerning the communication of information to IMO, and comply with the requirements of the revised Convention.

5.3.3 Issue of Certificates

A register of certificates, endorsements and other documents that are issued should be maintained by all administrations. Parties are also required to obtain evidence of the identity of the seafarers and maintain records of all certificates issued including those lost or stolen. This is to facilitate the checking and verification of the status of certificates, endorsements and dispensations in order to identify the authenticity and validity of certificates of alien seafarers.

5.4. Port State Control

Article X and regulation I/4 of the revised Convention, contain control measures which, inter alia, enable port state inspectors to:

- verify that all seafarers on ships in their ports who are required to hold certificates do so, and that the ship complies with the flag state's manning requirements;
- check that flag state's endorsements of certificates issued by other countries rather than the flag state are in order or that the evidence exists that applications for such endorsements have been made;
- detain ships if deficiencies in certification requirements are not made good and constitute a danger to persons, property or environment;
- make all efforts to avoid the delay of ships, and to compensate any loss or damage resulting from the incident when exercising these controls;
- give no more favourable treatment to ships of a non-Party than is given to ships entitled to fly the flag of a Party.

5.4.1 Port State Control Intervention

Enhanced procedures now empower port state inspectors to intervene in the case of deficiencies which may pose danger to persons, property or the environment. This would apply if certificates are not in order or the ship is involved in a collision or grounding or if the ship is manoeuvred in an erratic, unsafe manner.

Regulation I/4 authorises port state officers to ensure that the seafarers have sufficient shipboard competence to enhance safe and pollution free operations of the ship. This check is limited to checking onboard procedures relevant to the ISM Code and the safety of the crew to safely execute those procedures.

What this entails is that, if the port state control inspectors investigate and find evidence that crew training skills are in question, inadequate or unconvincing, the officers may ask to observe a demonstration of the relevant skill. It should be noted that the first priority of the port state control inspectors is to verify the certificates held by the crew on board.

5.4.2 Widen Scope of Assessment

The grounds for port state control assessment should be widened to include cases such as:

- failure to follow safe navigational practices;
- failure of the watch arrangements to conform to requirements of the flag state;
- inability to have a rested person on watch on any part of the voyage;
- a watch not having a capable person to operate essential equipment.

These circumstances widen the scope on which a port state can assess the watch-keeping standard of a foreign ship and detain a ship if the deficiencies pose a danger to persons, property or the environment.

5.4.3 Port State Control Interests

It is in the best interest of the port state officers to protect their coastal waters and ports. They have a generally accepted duty, among other things, to ensure that ships move in and out of their ports safely without undue risk to safety of life, property and the environment. One could realise the economic losses and trade disruptions if ships were manned by inadequately trained or incompetent seafarers or by having sub-standard ships visiting these ports; thus these justify port state actions to ensure that the international convention standards are observed.

5.5 Quality Standards

The implementation of the new STCW standards is further reinforced by the provisions in the revised Convention that require the governments to demonstrate that their training and certification systems that are approved in those countries are subjected to independent evaluation and should incorporate quality standards.
Chapters 3 and 4 explain these STCW quality requirements.

Quality standards are quite specific in that they should show:

- the education and training objectives;
- the related standards of competence;
- that the required knowledge understanding and skills, are clearly demonstrated.

5.5.1 The Key Components

Education and training objectives, whether they are related to officer, rating training or special courses, must be encompassed under one framework. These objectives must address:

- quality standards - the key element;
- quality standards model - for assessment of knowledge, understanding, skills and competence;
- the need for an independent evaluation;
- the need to submit a report on that evaluation to IMO.

5.5.2 Monitoring of Quality Standards

As from February 1, 1997 onwards, governments must ensure that all training, procedures and the administrations of the national certification system should be effectively regulated, independently monitored and periodically audited through a quality standards system.

These quality assurance requirements apply irrespective of which organisation performs them, whether done ashore or on board ships. It must be noted that these requirements also apply to activities regarding the issue, endorsement and revalidation of certificates under the transitional provisions.

5.5.3 Independent Evaluation

Parties are to ensure that all aspects of their national training and certification procedures and processes are subjected to independent evaluation regularly. The full evaluation report is to be communicated to IMO and should include details of the qualification of those undertaking the task.

5.5.4 Implementation by the Pacific Forum Nations

The current arrangements for the adoption of the STCW Convention is one based largely on trust; the requirements concerning the information to be conveyed to IMO are ignored. More stringent requirements have been put in place with adequate

controls and safeguards to ensure that all the revised Convention requirements are properly enforced. These are explained in Sections 5.1 to 5.5.

As there is a short supply of qualified maritime personnel, lack of expertise and resources in the Pacific Forum Nations, these countries should co-operate to pool their efforts, financial and manpower resources to ensure that the requirements of the Convention are complied with. These include:

- ensuring that the procedures and the processes concerning the revised Convention requirements are met and the report made to IMO;

- port state control inspectors as well as flag states should not automatically accept certificates issued by governments which do not appear on the 'white list', as described in Section 5.3.2 of this Chapter. Procedures must be complied with before certificates are issued. These will include establishing identity and proof of seafarers age, medical reports, attendance of an approved training programme and completion of sea service requirements. Records of all on board training and assessment of all certificates and endorsements which are issued, revalidated, lost, suspended or cancelled. This information is to be made available to other administrations or companies;

- making a formal undertaking between the flag state and the issuing administration concerning the obligation to satisfy certain requirements before granting recognition of alien certificates. In this regard, the flag state will be obliged to satisfy itself by inspection, assessment and monitoring, that the revised Convention standards are enforced in the country of origin of the seafarers;

- ensuring that all personnel with authority to assess or certify the achievement of any standard of competence, should be experienced and qualified to satisfy the

standards in the STCW Code. Furthermore, all training, examination and assessment procedures and the administration of the national certification systems should be effectively regulated, independently monitored and periodically audited to the standards set in the Code. Regulations and guidelines regarding the implementation of the quality assurance system, the approval of training courses and the use of simulators in training are to be followed;

- some administrations in the regional states choosing not to adopt the amendments to the Convention and continuing to issue or recognise certificates as they do now. If this is proved to be the case then these regional states would not have achieved the objective of ensuring a general uplift of STCW standards. The development of a "well balanced package" of controls in this area would then be difficult to achieve.

These issues were further shared by David Dearsley when he said, "If the costs of failure are high, the rewards of success are very considerable to employers, National Administrations and to seafarers. We have a unique opportunity to shape the future of maritime training and qualification and we really cannot afford not to grasp the opportunity with both hands, aiming for the highest possible achievable standards."

CHAPTER 6 : CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The new STCW Convention will come into force on February 1, 1997. Governments will have to take all necessary action to give full and complete effect to the requirements before that date. All officials concerned have to co-operate and commit themselves to the task at hand. This may require working at unaccustomed speed and efficiency in order to meet all the requirements by the due date.
The changes that the new Convention will bring are set to affect everyone in the industry. This revision is not in dispute. The rapid technological changes in the shipping industry, the shift in crew supply from traditional maritime nations, the scores of marine tragedies, human error, among other things, all indicate the need to update the Convention.

The Secretary for IMO, Mr O'Neil rightfully said, 'The standards that you have accepted will go a long way to improving safety at sea. The key now is to achieve world-wide and effective implementation.' The instrument demands mandatory standards setting, auditing and reporting to IMO.

It would be an expensive waste of time, effort and resources if the requirements were not implemented and enforced. It is an undisputed fact that unless all the countries around the globe can implement the agreed standards, then no amount of updating or revising of the Convention will achieve the objectives intended.

The government administrations, the flag state administrations, the training establishments, port state controls, the shipping companies, and the shipowners each have an important role to undertake to ensure the success of the STCW 95.

6.2 Conclusions

A number of important issues have been identified, which are outlined below. The conclusions are:

- some regional countries have not ratified the STCW Convention, although they may be using the South Pacific Maritime Code as their manning and certification guideline. These countries should accede to and ratify the convention immediately as this would provide a stronger regional voice at IMO and ensure that the certificates issued to Forum nationals are internationally recognised.

- the South Pacific Maritime Code syllabus is obsolete, since it does not enhance the highest practical standards for seafarers and neither does it address the current maritime practices. This document is to be provided in a binder so amendments can be made as and when required. The content of such to be reviewed regularly, not exceeding four years.

- the existing certificate holders will be affected by the Convention new requirements. Where the holders have not completed safety courses or minor parts of the new requirements, the area of operations be endorsed, such restrictions be removed when all conditions are met. The recognition of these developments to be sought from IMO.

- the Forum Secretariat should co-ordinate and convene seminars and workshops, whereby the representatives from relevant organisations in the forum states are

represented to iron out these differences. Consultants from IMO should be engaged in these meetings to render their expertise and valuable advice.

- all forum island countries should realise the immensity of the measures to be taken, the lack of financial, human and physical resources and the very short time left in which all these have to be accomplished to meet the deadline. It is unlikely that politicians, or senior government officials have any idea of the size/enormity of the task at hand. Commitment from a very high level in the government e.g. the Permanent Secretary level is necessary in order to have their countries on the white list. Then, when the commitment is achieved, a person such as the Director of Marine should be charged with the responsibility of bringing about the necessary changes in the new instrument.

- there is a need to improve the qualifications of instructors, lecturers, curriculum developers, examiners and the training institutions to be audited. In addition, there should be more scope to use modern technology in assessing and maintaining standards than is done at present. A new charge of fresh air could be added to the new Convention if criterion referenced standards of competence, guidelines on skills, performance measurement, instructor/examiner qualifications and simulator practices are part of the seafarer training.

- port state control cannot be selective in applying the full effect of the Convention requirements. It is recognised that port state control is only a remedy and not a cure and therefore cannot totally eradicate the ills. It nevertheless, remains a powerful force when these requirements are seriously implemented and enforced.

- the management of shipping companies plays an instrumental role in the success of the Convention. The commitment from the management will enhance safety in these organisations.

The process of the implementation and enforcement of the Convention requirements may be realised as an extra work load for all the concerned parties. However, in the foreseeable future it will uplift the minimum standards around the globe to bring about safer shipping and cleaner environment.

6.3 Recommendations

It is strongly recommended that:

1. all Forum Island Nations that have not done so, accede to, and ratify the STCW Convention at the earliest possible date;

2. all the Forum Island countries adopt the South Pacific Maritime Code for their certification and manning processes;

3. the South Pacific Maritime Code syllabus be updated and changed to an objective format or performance based system;

4. seafarers' training procedures and processes be monitored for quality and evaluated regularly within the organisation and also by external assessors;

5. seafarers' training be designed and monitored to follow a written structured training programme;

6. the use of simulator and computer aided learning be used to bridge the gap between shore establishment training and shipboard practices;

7. the existing certificate holders be covered by either a 'grandfather clause' for their present level of activities or be issued with equivalent certificates;

8. instructors/lecturers, curriculum developers, and examiners be retrained;

9. MET personnel be thoroughly conversant with the quality standards system and its requirements;

10. a concerted effort should be made to develop a regional standard teaching programme to cover those offered at maritime institutes.

11. a question bank/database be developed to be used by the regional states;

12. maritime institutions revive and re-establish links with the National Administrations, shipping industry other maritime sectors and the National Training Council;

13. the forum island states pool their resources to meet all the requirements of the revised STCW Convention; and procure the necessary simulators, and structures, the same to be delivered and utilised at the three regional maritime centres;

14. the Forum Secretariat co-ordinate and convene seminars/workshops to discuss the implications and requirements of the revised Convention;

15. each government to designate a top official to be responsible for bringing about the necessary changes in the new STCW Convention in the regional states;

16. flag state administrations, while attracting more tonnage to their registries, do not lower the standard of the prescribed regulations;

17. shipping companies develop and promote awareness of their new role in the maritime community and of the seafarers' duties and responsibilities.

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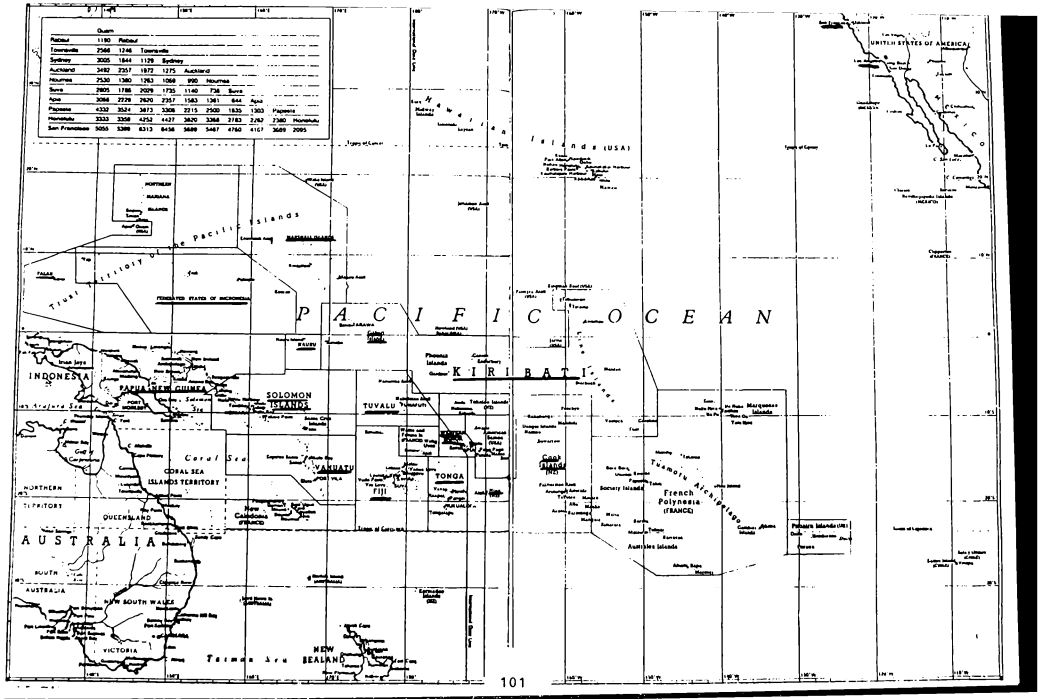

Quam
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Townsville 2566 1246 Townsville
Sydney 3005 1844 1129 Sydney
Auckland 3492 2357 1972 1275 Auckland
Noumea 2530 1380 1263 1068 990 Noumea
Suva 2805 1786 2029 1735 1140 736 Suva
Apia 3086 2729 2620 2357 1583 1361 644 Apia
Papeete 4332 3524 3873 3308 2215 2500 1835 1303 Papeete
Honolulu 3333 3358 4252 4427 3620 3366 2783 2262 2380 Honolulu
San Francisco 5055 5399 6313 6456 5689 5487 4760 4167 3689 2095
PACIFIC OCEAN
Hawaiian Islands (USA)
UNITED STATES OF AMERICA
Trust Territory of the Pacific Islands
FEDERATED STATES OF MICRONESIA
INDONESIA
PAPUA NEW GUINEA
SOLOMON ISLANDS
TUVALU
KIRIBATI
Coral Sea
CORAL SEA ISLANDS TERRITORY
VANUATU
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QUEENSLAND
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SOUTH AUSTRALIA
NEW SOUTH WALES
VICTORIA
Tasman Sea
NEW ZEALAND
New Caledonia (FRANCE)

APPENDIX 2

Contents of Chapter 1 (General Provisions) of the revised annex to the STCW Convention and the STCW Code

Regulations

1/1 **Definitions and clarifications**
Defines and clarifies key terms used throughout text.

1/2 **Certificates and endorsements**
Explains the format and information, including photos, to be incorporated into STCW certificates and the flag state endorsements.

1/3 **Principles governing near-coastal voyages**
Explains conditions pertaining to different STCW standards that might apply to such voyages.

1/4 **Control procedures**
Outlines circumstances in which port state control inspectors may assess the operational competence of seafarers and in which ships may be detained with regard to non-compliance with STCW.

1/5 **National provisions**
Specifies circumstances in which flag states should apply penalties to companies and seafarers not in compliance with STCW requirements.

1/6 **Training and assessment**
Concerns qualifications of trainers and assessors.

1/7 **Communication of information**
Concerns the requirement for governments to submit to IMO documentary evidence of compliance with the Convention.

1/8 **National objectives and quality standards**
Stipulates the incorporation, by governments, of quality standards in their training and certification regimes subject to independent evaluation.

1/9 **Medical standards and the issue and registration of certificates**

Concerns medical fitness, eyesight and minimum age requirements, etc.

1/10 **Recognition of certificates**

Clarifies flag state responsibilities concerning the competence of foreign seafarers.

1/11 **Revalidation of certificates**

Concerns the requirement for governments to revalidate STCW certificates and to compare the qualifications of existing certificate holders with those issued certificates under the revised Convention.

1/12 **Use of simulators**

Contains extensive mandatory requirements and recommendatory guidance concerning performance standards for simulators.

1/13 **Conduct of trials**

Concerns procedures for experimentation, conducted under the authority of flag states, with new practices and techonology not covered by the Convention.

1/14 **Responsibilities of companies**

Contains explicit requirements with which shipping companies must comply.

1/15 **Transitional provisions**

Concerns provisions of the required Convention that governments are not required to implement by February 1997.

Source: ISF (1995 page 41)

APPENDIX 3

Contents of Chapters 2 to 8 of the revised annex to the STCW Convention and the STCW Code

Chapter 2 **Master and deck department**

Contains precise standards of competence at different levels of responsibility, defined in detailed Competency Tables for the functions that comprise the deck department, and the mandatory minimum requirements for certification.

Chapter 3 **Engine department**

Contains precise standards of competence at different levels of responsibility, defined in detailed Competency Tables for the functions that comprise the engine department, and mandatory minimum requirements for certification.

Chapter 4 **Radio communication and radio personnel**

Contains precise standards of competence for GMDSS operators defined in a detailed Competency Table

Chapter 5 **Special requirements for personnel on certain types of ship**

Contains special training requirements for personnel on tankers and ro-ro passenger ships.

Chapter 6 **Emergency, occupational safety, medical care and survival function**

Contains minimum requirements for familiarisation in safety matters for all categories of personnel except passengers, plus basic safety training and instruction, detailed in Competency Tables, for all seafarers with designated safety and pollution prevention duties.

Contains standards of competence, detailed in Competency Tables, for personnel with special responsibilities concerning survival craft, rescue boats, fast rescue boats, medical care and advanced fire fighting, plus the relevant certification requirements.

Chapter 7 **Alternative certification**

Contains conditions and principles governing alternative methods of issuing certificates that deviate from conventional divisions between the deck and engine department.

Chapter 8 **Watchkeeping provisions**

Consolidates watchkeeping requirements governing the performance of deck, engine and radio watches contained in the different parts of the existing Convention, including new mandatory provisions concerning minimum rest periods for seafarers and the recommendatory guidance on the prevention of drug and alcohol abuse.

Source: ISF (1995 page 42)