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## A review and evaluation of the maritime training and education conducted for ratings at the Marine Training Center, Western Samoa, and the changes required to comply with the STCW 95

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**WORLD MARITIME UNIVERSITY**  
Malmö, Sweden

**A REVIEW AND EVALUATION OF THE MARITIME  
TRAINING AND EDUCATION CONDUCTED FOR  
RATINGS AT THE MARINE TRAINING CENTER,  
WESTERN SAMOA, AND THE CHANGES REQUIRED  
TO COMPLY WITH THE STCW 95**

By

**PERIVE TANUVASA LENE**  
Western Samoa

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

**MASTER OF SCIENCE**

in

**MARITIME EDUCATION AND TRAINING**  
**(Engineering)**

1997

# ***DECLARATION***

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

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

  
.....  
10/08/97  
.....

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Special mention must be made of my dissertation supervisor, Professor P. Muirhead, for his professional and excellent feedback which both enabled me to successfully complete this dissertation and increase my valuable knowledge about the topic and its future practical implementation in real life.

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Special thanks to all my family members, relatives and friends for their kind and loving support to my family during my absence for studies in Malmö, Sweden.

Most important of all, I wish to thank my wife, Donna Lesley Lene, sons Toaalii Kim Perive Lene and baby Mareko Ropati Lene for their prayers, patience and encouragement during the time of my studies. This dissertation is dedicated to you.

# ABSTRACT

The dissertation looks at the current structure of maritime training for ratings in Western Samoa and how it should be modified and upgraded in order to comply with the main changes required by STCW 95. It discusses ways and approaches to be undertaken for the effective implementation of such features as a quality standard system, competency based training and assessment and staff training and qualifications.

The paper describes and gives an account of what is practiced in Western Samoa, identifying areas which should be improved and changed to meet the new requirements. The main issues that are analyzed in determining the best methods to develop acceptable steps to IMO in the implementation process include examination of the current training and assessment system used and verifying deficiencies that will need updating or changing. Due to the introduction of the use of quality standards systems in training and certification, the paper in its analysis and evaluation of different parts of the system discusses the changes required of them. All the changes after careful consideration, are encompassed within the quality standards requirements. As a first step, one of the areas that is assessed and improved is the overall school organizational structure due to its important effect on the successful implementation of the changes. The mission, aims and objectives of the school are clearly defined and the role and responsibilities of academic boards and committees identified.

The paper examines and evaluates several approaches to dual purpose or multi-skilled ratings training and develops a scheme for Western Samoa to keep up with the current and future trends in manning demands and to improve and widen the graduates' level of safety awareness onboard. The current training curriculum is examined and a number of changes are proposed to meet these new demands.

The paper investigates the requirements for staff qualifications and experience and considers and makes recommendations on how staff can be upgraded to meet the specified standard. In addition, one of the important issues that the paper discusses is how staff can be retained in the school as a result of better employment opportunities being offered to them from the industry, especially if they gain higher qualifications through the school.

To ensure better quality in course subject deliverance and assessment, suggestions are made on the steps to be undertaken to improve and upgrade training facilities and equipment.

The new draft of the Western Samoa Shipping Act is also examined and discussed, particularly the section of the Act that covers the STCW Convention, its requirements and how it is applied in training and certification.

The paper also examines what is currently being carried out on a Pacific regional level in assisting island nations and their institutions in the preparation of the official information documentation for IMO and implementation of the amendments during the transitional period.

Finally, the paper includes in its recommendations the Maritime Safety Committee's resolutions during its sixty-eighth session 18 February 1997 (MSC 68/5/1 Agenda item 5). They include draft procedures and related matters for the Maritime Safety Committee to give effect to regulation I/7, paragraph 3, of the 1995 amendments to the 1978 STCW Convention. This offers to all Parties to the Convention precise information and proper guidelines of what they should communicate to IMO.

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# LIST OF ABBREVIATIONS

AB	Able Body Seaman
GMDSS	Global Maritime Distress and Safety System
IMO	International Maritime Organization
MOT	Ministry of Transport
MSC (IMO)	Maritime Safety Committee
MSC	Mediterranean Shipping Corporation
MTC	Marine Training Center
OS	Ordinary Seaman
PIC	Pacific Island Country
RMTC	Regional Maritime Training Co-ordinator
SPC	South Pacific Commission
STCW	Standards of Training, Certification and Watchkeeping for Seafarers
STW	Standard of Training and Watchkeeping
U.N.E.S.C.O.	United Nations Education, Social and Culture Organization

# CHAPTER I

## INTRODUCTION

As a result of international public concern about the increased number of maritime casualties which have affected human lives, properties and the environment, the International Maritime Organization (IMO) had to take steps on an international level, to try and solve and control the stated problems which were mainly caused as a result of human error. Although there was an international convention (STCW 78) already in place, covering the training and certification requirements of seafarers to ensure that their competence level would improve the standard of ship operation, there was no stated procedure to ensure that the countries covered under the convention were complying with it.

This resulted in the amendments to the STCW 78 Convention as prescribed in the STCW 95 Amendments. This is based on the statement or philosophy of '*say what you do and do what you say*' whereby those involved in the STCW training and certification process, who state that they meet the new Convention standards fully and completely, will have to demonstrate clearly that they do what they say. In order to achieve the aims of the amendment, training and certification of seafarers will now undergo major changes in the way such training and certification will be conducted and administered under direct consideration and approval of IMO through the Maritime Safety Committee. This is by ensuring that governments are not only stating what changes they will make to comply with the new requirements but as

well, how and what steps they have undertaken to implement such changes within the stated time frame in the amendments. Thus, maritime training institutes around the world will have to make the necessary changes in their training and certification systems so that they are accepted by IMO as complying with the amendments, recognized by other countries and their graduates accepted for employment in the national and especially international market.

The aim of the dissertation is to introduce the changes required of the Marine Training Center (MTC), Western Samoa, to comply with the STCW 95 Amendments to improve the competence and skills of seafarers for the promotion of safer shipping and cleaner oceans. These include changes in its organizational structure, aims and objectives. As well, recommendations will be made to change and upgrade the course structure and curriculum to meet the needs of ship owners in keeping up with modern developments in ships design and technology.

The main body of the dissertation is presented from chapter two to chapter five.

Chapter two discusses the historical background and development of MTC and why it was set up. It then analyses its current operational framework and details of the courses the school is conducting. The problems the school is experiencing is also discussed as well as its future strategic plans.

Chapter three present an overview of the newly established regional 'Association of Pacific Islands Maritime Training Institution and Maritime Authorities'. The chapter gives an account on what the purpose, goals and objectives of the association and discusses its role in assisting governments in the region and their maritime institutes to comply with the STCW 95 amendments and requirements.

Chapter four gives the writers' analysis of the STCW 95 and its content. The purpose of the revision is discussed as a result of national and international demands based on maritime catastrophes and other contributing factors related to the convention's reliability and validity. The writer then present an account of the amended annex, code and a summary of the resolutions. Finally, an assessment and

summary of the STCW 95 and how it will affect governments, training institutes and the shipping industry in the Pacific is presented.

Chapter five states the proposed changes that MTC will have to implement. This include developing a quality standard system and proper organizational structure, revised training curriculum and assessment, staff experience and qualification requirements and upgrading of teaching facilities and equipment. These are based on the requirements of the amendments, the writer's working background experience and knowledge and information gained during the two years studying at the World Maritime University.

Chapter six present the conclusion and recommendations made in order to achieve the aim of the dissertation in raising the level of training and competence for ratings. The writer intends to use the dissertation as a guidance for the Western Samoan maritime authority and institute, and where applicable, other similar rating schools in the Pacific region.

Due to the current ongoing international debates since the amendments became effective and still within early stages of implementation, a lot of ideas and information was available from IMO publications, the presentations of WMU resident and visiting professors and associated course notes, the general maritime media in the form of periodicals, articles, conferences and seminars papers, and others. This helped a lot during the dissertation information research due to it being a maritime issue of high priority. Other specific information on a national and regional level i.e. Pacific, Western Samoa, was requested and although it was not readily available, sufficient time was allowed and was received on time.

The research methods centered mainly on the literature search covering the topic that was available in publications and during course work. Information not readily available in the university was requested from outside or overseas sources through faxes and postage. The information was then analyzed and evaluated, appropriate data being selected for the dissertation and put together in a comprehensive form.

# CHAPTER II

## The Western Samoa Marine Training Centre (MTC)

### 2.1. Historical Background and Development

The school was initially set up and funded by the government of the Federal Republic of Germany during the mid-1970's under its bilateral aid program to the government of Western Samoa. It was officially opened with the running of the first basic maritime course for ratings in 1980.

The aim of the project then was to provide maritime training for ratings and trainees in the deck, engine and catering departments to man a ro-ro container vessel built for the Western Samoan government by the German government. In addition to employing graduates on the national vessel, the German company, Hamburg Sud, which was managing the new vessel under the agreement, offered to employ graduates onboard its vessels of which two were later registered in Western Samoa. This was because the national vessel could only take in a limited number of graduates and to assure continued operation of the school, more employment opportunities had to be secured.

At the time, it was a good arrangement with both governments benefiting, i.e. the German company was getting cheaper seafarers from a developing country and Western Samoan citizens were getting employment opportunities plus the school.

The school was headed by a German superintendent with a nautical background and assisted by a technical officer with a marine engineering background. The rest of the supporting teaching staff and others were made up of local employees funded by the local government.

The courses conducted between 1980 and 1983 consisted of the following:

1. Basic course for deck, engine and catering ratings
2. Upgrading course for deck and engine ratings

The course curriculum and teaching syllabus was based on a German one which was designed for training foreign students employed onboard their vessels and complying with the STCW 1978 convention.

All of the office, teaching aids and equipment were supplied by the German government under the agreement and in accordance with their standards of quality.

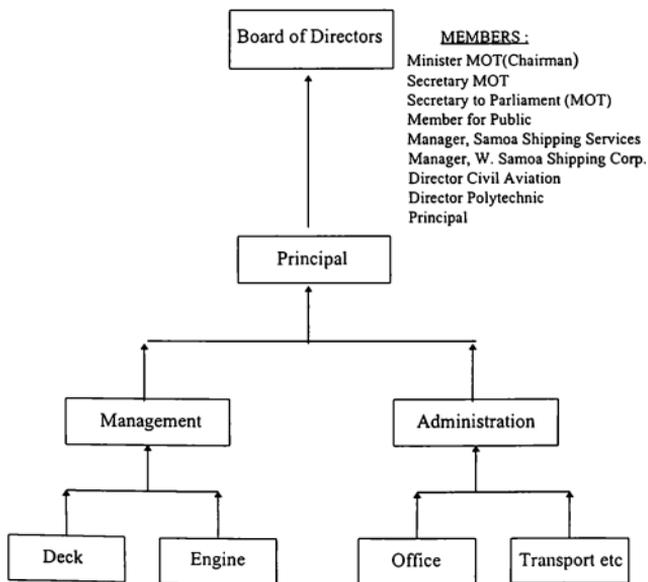
To familiarise the local teaching staff with onboard training needs and demands, they were sent onboard foreign going vessels under German supervision to get as much experience as they could in the reality of navigation, seamanship and engine room working conditions and demands. This helped the instructors a lot in training and preparing the ratings for working skills required onboard.

By 1983, Hamburg Sud declared that they could not provide or guarantee enough employment opportunities for the graduates on a long term basis due to economical reasons as a result of the negative trend in the shipping market at the time. This meant that the number of Samoan seafarers employed onboard its ships would be limited and later be without jobs. Thus, continued operation of MTC was threatened as graduates would become unemployed since Hamburg Sud was the only main employment source at the time.

Efforts to try and solve the problem were not successful so at the end of 1983 the two governments decided to close the school for a temporary period of time until further employment opportunities were available and secured. Later, Hamburg Sud

sold the two ships registered in Western Samoa to an Italian company which now employs most of the MTC graduates, thus ending its involvement as an employer. In 1986 the school, with a wider scope of goals and objectives was reopened under full control and administration of the Western Samoan government. The aim was to provide training not only for foreign going seafarers but as well for coastal and other maritime related demands. The school was and is now governed by a board of directors appointed by the government's cabinet in accordance with its policies and under the Ministry of Transport (MOT). The board is currently chaired by the Minister of Transport with members representing the Ministry of Transport, shipping industry, civil aviation, education department, polytechnic institute and the school.

**Figure 2.1. MTC FLOW PLAN**



The principal is directly responsible for the day to day running of the school, its general administration, preparing of the annual, budget and financial reports for presentation to the school board. In addition, he is responsible for representing the country and school on national, regional and international level. As well, one of the most important role is seeking and preparing formal documentation of requests for assistance whenever available or required.

The principal, advisors and instructors are all directly involved in course development, administration and assessment. This is to make sure that all of the teaching staff, being directly involved would be more committed in assuring that the course objectives are achieved. This, from the writer's experience and point of view, is an advantage with small institutes because direct contact and communication between management and staff is available and possible almost all the time.

The staff consist of :

- Principal
- Nautical Advisor (Japan)
- Technical Advisor (Japan)
- 2 Nautical Instructors
- 2 Technical Instructors
- Secretary/Typist
- Workshop assistant/driver
- Cook

The school's annual budget is funded under a formula prepared by Cabinet whereby more than fifty percent is paid for by the Ministry of Transport under its annual budget and the rest is divided among the two shipping companies and the airport authority which are all represented on the school board. Revenue earned from school fees is also used in the budget as the school contribution.

The German government continued their assistance by providing a nautical and technical advisor and supplying equipment for the school until 1992. Since then, the government of Japan has been assisting the school by providing two advisors; one nautical and one technical with continual upgrading and supplying of equipment. It is hoped that they will assist in staff training and development in the near future.

Other governments and organisations that have assisted the school are Australia, New Zealand, UNESCO and IMO.

Since its reopening in 1986, the course curriculum and teaching syllabus were revised and updated to comply with both the STCW 1978 and the South Pacific Maritime Code requirements. This was due to the school offering and conducting courses for both coastal and foreign going seafarers so that employment of graduates now includes the local shipping industry, the Marine division of MOT and other maritime related companies or industries.

### **Other Developments**

The school was set up to run courses for ratings only and although suggestions were raised about conducting officers training as well, the MTC management have declined it on the following basis:

- developing it to such a level if properly run would cost a lot of money (a major problem) in upgrading the teaching staff and equipment
- to make use of officer training institutes in the region which are already in existence rather than trying to duplicate them e.g. Fiji, Australia, New Zealand

The school management believes that with the current training programs offered and the staff and equipment available, the school is capable of producing a good quality training basis for ratings and as well a good foundation for graduates who would like to pursue careers as an officer. Since 1990, the number of students applying for positions in the basic courses has increased tremendously e.g. between 200 and 300 for 30 vacancies. As well, the academic level has increased from graduates in year 10

and 11 to year 12 plus students who have completed the university preparatory year. The school has now formed a special pool or group of graduates who would be eligible for future officers' training in one of the regional officers' training institutes. This is determined by their academic background before attending MTC, their course performance, end of course results and seatime experience. As of now there is no system or agreement in place for funding such training but the management hopes to negotiate with the government and any other source of funding available e.g. shipowners, manning agency etc., in the near future.

## **2.2. Courses Offered at MTC**

### **2.2.1. Courses for Ratings**

The courses are conducted in accordance with plans prepared by the school management of the type, duration and dates of the courses. The plans consist of long term ones i.e. 3 to 5 years which are prepared and presented to the board for discussion and approval and are based on the demands indicated by the employers for the given period. As well, before the start of each calendar year, the school sends out memos to the employers to reconfirm their commitments before the management prepares the final training schedule for the specific year.

#### **Basic course for Deck and Engine Departments**

The basic course is designed with the goal of developing fundamental maritime knowledge and skills for ratings. As most of the students are from family and academic backgrounds with limited knowledge about the maritime field, the courses are designed and based on the philosophy that the new students are taken through the school gate and led into a completely new learning environment which they have never been exposed to before.

During the course, they not only learn and develop their skills in their specific area of training, but as well, they are trained to be independent and responsible. These are two of the most important behaviours stressed during the course.

These are achieved by training them in taking turns to be on a watch system and staying at the school by themselves under the guidance of appointed leading hands and duty officers. This gives them the opportunity to undergo simulated routine duties similar to those done onboard with the kind and level of discipline required of them. The ratings have to pass all the required exams in order to graduate.

When they graduate, they are employed onboard as trainees for a period of six months before being accepted as full members of the crew when each becomes an Ordinary Seaman (OS) on deck or an Oiler in the engine room.

**Figure 2.2. Training Program**



The following tables illustrate the syllabus outline for deck and engine ratings covering a one year course:

Table 2.1. DECK RATINGS SYLLABUS		Table 2.2. ENGINE RATING SYLLABUS	
1. Safety		1. Safety	
1.1 Fire Fighting	78	1.1 Fire Fighting	78
1.2. Sea Survival	78	1.2. Sea Survival	78
1.3. First Aid	40	1.3. First Aid	40
1.4. Accident Prevention Regulation	4 200	1.4. Accident Prevention Regulation	4 200

2. Trade Theory		2. Trade Theory	
2.1. Watchkeeping	161	2.1. Working Materials	52
2.2. Arrival and Departure Operations	50	2.2. Workshop Theory	103
2.3. Ship Structure and Stability	90	2.3. Trade Calculations	103
2.4. Cargo Handling	95	2.4. Technical Drawings	124
2.5. Shipboard Maintenance	46	2.5. Engine Knowledge	156
2.6. Rigging Technology	80		538
	522		
3. Trade Practice		3. Trade Practice	
3.1. Watchkeeping	70	3.1. Bench Work	428
3.2. Arrival and Departure Operations	30	3.2. Machine Work	124
3.3. Ship Structure and Stability	25	3.3. Maintenance	190
3.4. Cargo Handling	50		742
3.5. Shipboard Maintenance	200		
3.6. Rigging Technology	185		
3.7. Onboard Field Trips	88		
	648		
4. General Knowledge		4. General Knowledge	
4.1. Induction	40	4.1. Induction	40
4.2. General Studies	18	4.2. General Studies	18
4.3. Physics	130	4.3. Physics	120
4.4. Mathematics	122	4.4. Mathematics	22
	310		200
<b>Total Hours</b>	<b>1680</b>	<b>Total Hours</b>	<b>1680</b>

### Upgrading Course

This course is conducted after the completion of the basic ratings training program. It is a follow up to the basic course and only accepts ratings who have completed seetime experience as an OS or Oiler for not less than two years. The course is designed to take them to the next step and level of what they have learnt during the basic course and as well to test the skills they have gained during their onboard seetime services. If successful, they will be issued with AB or Motorman's certificates.

The syllabus outline for upgrading courses is shown in the following tables for 3 months duration:

Table 2.3. DECK UPGRADING COURSE		Table 2.4. ENGINE UPGRADING COURSE	
1. Safety		1. Safety	
1.1. Proficiency in survival craft	40	1.1. Proficiency in survival craft	40
1.2. Refresher - general	20	1.2. Refresher - general	20
	60		60
2. Ship Handling		2. General Studies	
2.1. Watchkeeping	30	2.1. Trade calculation	12
2.2. Signalling	10	2.2. Electricity	12
2.3. Anchor and mooring	20	2.3. Technical communication	8
2.4. Rules of the road	25		32
	85		
3. Seamanship		3. Workshop Theory	
3.1. Working techniques	50	3.1. Inspection tools	12
3.2. Ships types and construction	24	3.2. Thread fabrication	8
3.3. Ships maintenance	26	3.3. Joining techniques	20
3.4. Basic metal work	120	3.4. Technical materials	20
	220		60
4. Cargo Handling		4. Engineering Knowledge	
4.1. Cargo characteristics	15	4.1. Theory of diesel engines	50
4.2. Cargo care	20	4.2. Circulation system	24
4.3. Cargo gear	20	4.3. Engine auxiliaries	24
4.4. Maintenance of gear and hatches	20	4.4. Machine elements	20
	75		118
5. Revision and Assessment		5. Workshop Practice	
	40	5.1. Metal fabrication and welding	50
		5.2. Engine dismantle/overhaul	150
		5.3. Maintenance practice/procedures	70
			170
		6. Revision and assessment	40
<b>Total Hours</b>	<b>480</b>	<b>Total Hours</b>	<b>480</b>

### 2.2.2. Other Courses Offered

Since its reopening in 1986, the school had co-ordinated and conducted specially designed upgrading and safety courses for the seafarers employed by the local shipping corporation onboard their inter-island ferries. These were seafarers without

a proper training background who were employed before the school came into existence.

As of now, graduates have now been employed to take over most of the local fleet's seafaring positions.

### **2.2.3. Future Courses**

Plans are currently being carried out to develop and conduct courses for the certification of local masters and engineers which should comply with the new requirements of STCW 95.

This coincides with the current staff 5 year development and upgrading plan which started in 1995, as discussed later under staff qualifications. The school should then be able to conduct such courses in the near future.

## **2.3. Student Selection Criteria and Assessment**

### **2.3.1. Selection Criteria**

The following requirements must be met by any student before acceptance to undertake the entrance exam and interview:

- must be 16 years old
- must provide a valid medical certificate
- have a clean police report
- must have completed year 12 and above or graduated from the polytech in a technical field

The entrance exam is designed to assess their general knowledge in written English, physics and mathematics. This is revised and updated before each entrance exam by the school management and teaching staff. The final selection is made after interviewing a selected number of students in English to assess their communication level and abilities. The above selection procedure is conducted at the school under supervision of the staff and subjected to the final approval of the Principal. The

Secretary to the Ministry of Transport and the Board are then given a list of the final selected applicants and their personal details.

### **2.3.2. Assessment**

All the theoretical and practical exams are set and written by the teaching staff to evaluate if the students have achieved the objectives of the teaching syllabus. These are revised and updated from course to course with final approval from the Principal.

All the certificates issued by the school to graduates are endorsed and countersigned by the Secretary to the Ministry of Transport.

The certificates issued so far are:

1. Successful Completion of Basic Course
2. Personal Sea Survival
3. Proficiency in Survival Craft
4. Basic Fire Fighting
5. A.B. Certificate
6. Motorman Certificate
7. First Aid - conducted and issued by the Western Samoa Red Cross

## **2.4. Staff Requirements and Equipment:**

### **2.4.1. Staff Requirements**

#### Experience

Applicants for instructors' positions should have a minimum of five years' seetime experience onboard foreign going vessels. This is because most of the graduates are employed onboard foreign going vessels and therefore require teaching staff with such experiences.

As a result of the above, the only applicants that were able to meet the experience requirements were graduates from the school mainly from the early courses between 1980 and 1990. As of now all the instructors employed are ex-graduates from the mentioned period.

This is an advantage to the school because they are already familiar with the school daily routines and what is expected of them. As well, they are able to pass on their own personal skills and experiences to the students and prepare them both physically and psychologically for a totally new environment onboard. This is very important to island students because of their close family ties and traditional values and customs.

#### Communication

Instructors must be able to communicate fluently in oral and written English.

#### Qualifications

Instructors must have attended and graduated from a maritime institute with a certificate of competence as an officer. This must be equivalent to grade four as prescribed in the South Pacific Maritime Code and is the minimum requirement.

As well, the school management since reopening in 1986, would co-ordinate whenever funding is available, further training for staff in their specific fields to maintain a good standard. As an example, during 1997 one nautical and one engineering instructor are attending officers' training courses in New Zealand with the other teaching staff members following suit in 1998. In the mean time, the writer will complete his studies at WMU by the end of 1997 and join the school at the beginning of 1998 in time to help relieve the other staff who will be leaving to attend their training courses.

#### Teaching Experience

This is not a requirement as the current practise is that all new teaching staff will undergo a course and supporting workshops designed and conducted at the school by qualified staff and using the IMO model courses during their first three months before they can present any lesson. At the completion of the above period, they start by planning practical lessons only with the assistance of the course instructor in order to build up their confidence until they are ready to teach theoretical lessons. In addition they are assessed and evaluated from time to time by a senior and more qualified staff and take part in teaching staff seminars and discussions during course

breaks and before any new course starts so as to share experiences and update their experiences with other teaching staff members.

#### **2. 4.2. Equipment Used**

##### General

The following items are available for use:

- two fully equipped classrooms for theoretical lessons including video, overhead projector and storeroom for textbooks and other teaching aids
- one workshop and stores for engineering practical training
- one workshop and stores for deck practical training
- one fire fighting workshop and store
- one sea survival workshop and store
- one open lifeboat with davit
- one boathouse/workshop with rescue dinghy and sailboat
- fully equipped office and staffroom with computer, copy machine and fax machine for staff use

##### Teaching

Theoretical - a wide range of text books is available for general subjects and specific ones for deck and engine. As well, video tapes are available especially for safety training.

Practical - both the deck and engine workshops are equipped with the essential equipment and tools for basic training of ratings. They consist of all the basic seamanship and shiphandling equipment for nautical and workshop tools and machinery for engineering, in accordance with the practical training syllabus.

For onboard practical training, the school has access to co-ordinate and conduct field trips onboard the local shipping inter-island ferries and port tugboats in the use of navigation equipment and instruments on the bridge and engine monitoring and auxiliary systems in the engine room.

As well, every opportunity is taken to organise field trips to visit foreign going ships in port so as to give students a broader knowledge of the different types of ships in existence and the latest developments in maritime technology.

## **2.5. Graduates and Employment Record**

The graduates between 1980 and 1983 when the school was first opened were mainly employed onboard foreign going ships. As of now most of them have left and only a few are now employed in the maritime field as instructors at MTC, pilots for the marine division and nautical and engineering officers for the local inter-island ferries. When the school was re-opened in 1986, the following is the record of graduates as of the end of 1996:

**Table 2.5. Number of Graduates 1986 - 1996**

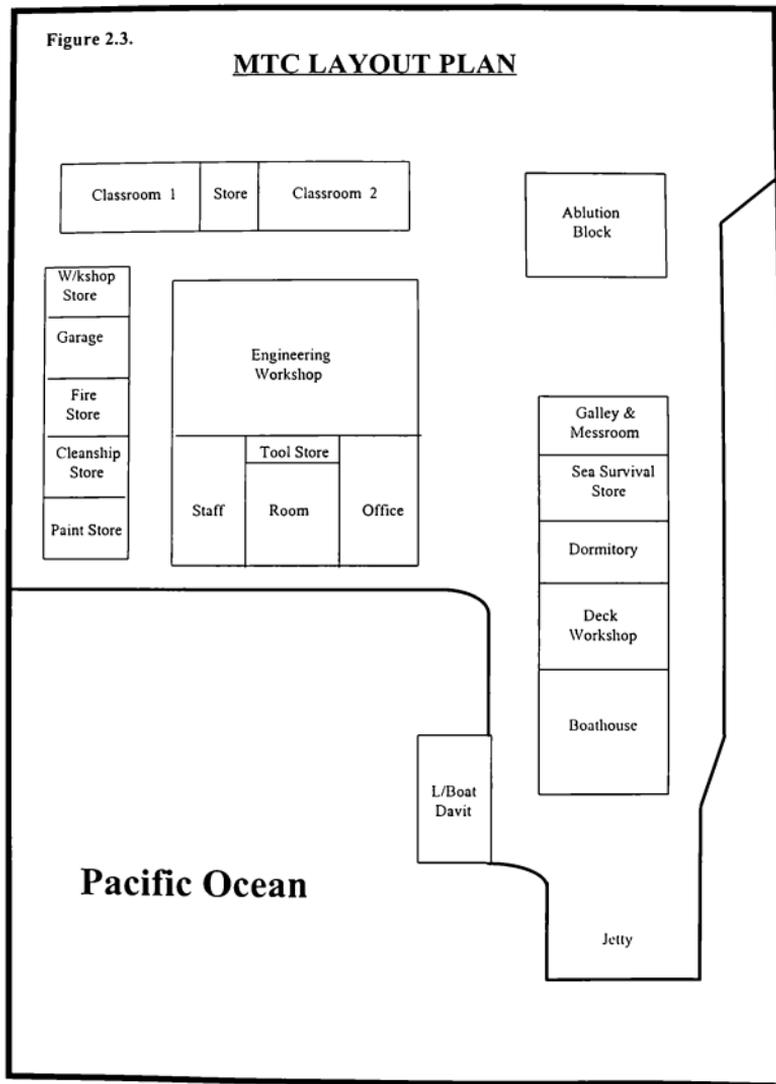
Type of Course	Number of Graduates
1. Basic	180
2. Upgrading	116
3. Special courses for coastal seafarers	102

At present, about seventy percent of the graduates are employed onboard foreign going vessels with the remainder on local ships. The foreign ships are owned and run by an Italian company (MSC) with sailing routes between Europe, Africa, Asia, Australia and USA. The graduates are employed onboard 25 ships which consist mainly of container vessels and a couple of passenger ships.

To assure continuous development and running of the school on a long term basis, efforts are still being carried out through negotiations with other foreign ship owners for more employment opportunities for Samoan seafarers. The writer believes that inclusion of Western Samoa in the IMO white list within the next two to three years should help in promoting the school's image for consideration by possible new employers.

Figure 2.3.

## MTC LAYOUT PLAN



# CHAPTER III

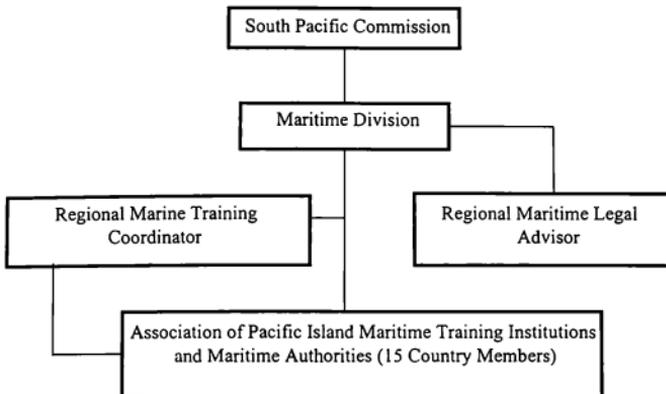
## **The Association of Pacific Island Maritime Training Institutions and Maritime Authorities**

The association was formed as a result of a survey of maritime institutes in the region conducted by the Maritime Division of the South Pacific Forum Secretariat in 1990. The aim of the survey was to look into the best possible ways of co-ordinating and standardising maritime training and certification in the Pacific and make appropriate recommendations. One of the priority recommendations was for member countries to get together to discuss, share and work out means and ways to solve common regional and national problems in maritime training and certification.

The members as of 1996 consist of the following countries :

1. Australia
2. Cook Island
3. Federal State of Micronesia
4. Fiji
5. Kiribati
6. Nauru
7. New Zealand
8. Papua New Guinea
9. Republic of Marshall Islands
10. Solomon Islands
11. Tonga
12. Tuvalu
13. Vanuatu
14. Wallis and Futuna
15. Western Samoa

**Figure 3.1. ORGANIZATIONAL CHART**



To achieve its purposes and goals, it was decided during the first meeting in 1992 that the association should employ, under the Maritime Division of the Forum Secretariat, a Regional Maritime Training Co-ordinator (RMTC) to facilitate its functions and co-ordinate proper development of training programs in the region. The Maritime Division was then requested to seek funding from donor countries and advertise the position. Funding was later approved and provided for by the government of New Zealand as well as a co-ordinator.

### **3.1. Purpose of the Association**

As discussed and agreed upon as resolutions during several meetings between 1992 and 1996, the purpose of the association was the forming up of a principal interactive forum to discuss, harmonise and develop the education, training and examination infrastructure for mariners of the region.

This will assure that there is an effective delivery of programs and courses to high uniform standards throughout the region for the issue of maritime qualifications that

will meet international standards. The main priority the association is facing now is to find regional solutions to Pacific Island Countries gaining entry to the IMO “White List” by August 1998.

### **3.2. Goals**

The goal of the association is to promote co-operation between maritime training institutions, examiners and shipowners in implementing uniform standards of certification, training and examination of mariners within the region in accordance with maritime conventions and regional codes.

### **3.3. Objectives**

The Association through its members advises the National Authorities on matters which fall within its purview, including but not limited to:

- the development, implementation and on going upgrading of a standard education, examination and certification system for mariners,
- co-operation in the development and exchange of information for delivery of standardised contents for common programs, courses and examination of mariners.
- the rationalisation of programs and/or course provided to optimise resources.
- the development and utilisation of a regional approach to the acquisition of funds, facilities and equipment to reduce duplication and promote delivery and uniformity.
- the development and implementation of National statutes, regulations, codes standards and procedures.

### **3.4. Role in Co-ordinating and Assisting Maritime Schools in the Region for Implementation of STCW 95**

The most urgent and current priority for the association and its members is how to assure compliance with the 1995 Amendments considering the limited time frame

given. As an example, 1 February 1997 is the final date by which all countries should have the appropriate legislation in place as outlined in the requirements of Article IV of the Convention, and by Regulation 1/7 of the 1995 Amendments to the Annex.

The following are resolutions by the association of steps to be undertaken by member countries through their representatives in order to accomplish adoption and implementation of the new STCW 95 amendments.

- a. The accession to the STCW 1978 and the adoption of the 1995 Amendments by countries which are not yet Parties to STCW 1978 but which;
  - i. have ships on their national register which trade occasionally overseas; and/or
  - ii. have nationals employed onboard ships registered overseas; and
  - iii. train seafarers and issue them with certificates of competency
- b. The adoption of the 1995 Amendments by all countries which are state parties to STCW 1978.
- c. The preparation of draft uniform legislation for adoption by all countries within the region which are or intend to become State Parties to STCW 1978
- d. The implementation of necessary national or domestic legislation/regulation to bring into force the provisions of the new amendments to the Convention
- e. That the development of uniform regional guidelines and enactment of national legislation and promulgation of regulations is a matter of utmost national and regional importance and urgency to the Forum island countries.
- f. That legal assistance was available to member countries at the Forum Secretariat through its Regional Maritime Legal Advisor. During its last meeting in April 1996, a Drafting Committee was set up under the guidance of the Legal Advisor to draft model Regulations to bring into effect STCW 95.
- g. To seek the assistance of an independent body to conduct training audits for maritime institutions as required.
- h. The Association makes a formal request to the governments of Australia and New Zealand to assist in enhancing its examination functions in whatever is required.

- i. The Association seeks out funding assistance to facilitate the establishment of courses and seek the co-operation of the IMO Technical Division for copies of existing IMO model courses.
- j. To co-ordinate the acquisition of charts, almanacs, tide tables, light lists, radio signals and other nautical publications from New Zealand, Australia and UK Hydrographic Departments in sufficient numbers to meet the future requirements of the examining authorities of the whole region.
- k. To facilitate the setting up of Question Banks for the purpose of ensuring uniformity among member countries' maritime training institutes.

During its last meeting in April 1996, a representative of IMO was invited to participate and present to the members an overview of the 1995 STCW Amendments under the following categories:

- a. On Board Training
- b. Simulator Training
- c. Watchkeeper Requirements

An open forum discussion on the presentation followed, whereby member countries' representatives were given the opportunities to raise questions on regional and national issues for clarification.

As well, representatives from New Zealand and Australia presented papers on the following topics:

1. Role of the Maritime Safety Authority of New Zealand
2. Role of the Australian Maritime Safety Authority

The above presentations gave the members a good idea of what is being carried out in the mentioned countries and how resources can be sought to help the island nations in developing regional and national systems.

The Regional Maritime Training Co-ordinator through the Maritime Division of the Forum Secretariat has kept the members informed of any recent developments in the

STCW 95 implementation e.g. by representing the Association at the IMO seminar and workshop Bombay, India, June 1996. This is carried out by keeping in touch with each individual institute, preparing recommendations and offering assistance when required to suit their needs in developing and upgrading their institutes and national constitution to comply with the new amendments. In addition to resolutions as stated above, some of the specific areas which directly affect training institutes that have to be looked at as soon as possible are:

- to update and rewrite all course syllabuses and details in the format given in the 1995 Amendments
- to set up Quality Standards Systems to comply with sections I/8, A-I/8 and B-I/8 of the Code
- the qualifications of instructors and assessors
- to review the South Pacific Maritime Code (SPMC) and make changes where applicable to comply with the amendments as Pacific Island Countries (PIC) are still using the SPMC until the 1 August 1998 e.g. certification structure

The main problem that may be encountered by the association in the near future is to keep the RMTC position funded on a long term basis as it is fully dependant on support from donor countries, which support is currently available for two years' contract period only. As of the end of December 1996, the Maritime Division ceased to exist under the Forum Secretariat and negotiations are currently underway to transfer it to one of the regional organisation, the South Pacific Commission.

As required by most donor countries and international organisations, any form of assistance is readily available to regional projects rather than individual or specific country projects. Therefore, continued existence of the regional association is essential to request and co-ordinate assistance to its members, especially during the current transitional period.

# CHAPTER IV

## The STCW 95

Since the STCW Convention 1978 entered into force in 1984, it was expected that it would raise the level of competence of ship personnel to a higher level. This was because the main goal and aim was to ensure safer operation of seagoing ships by complying with the minimum requirements and standards of the Convention, on an international level.

Unfortunately, it was not the case as it was realized later that rather than improving the competence level and safer shipping, it was losing its credibility although it was accepted by a large number of countries with about 95% of the world's total merchant ships tonnage.

One of the main reasons was that the Convention was too loose and open in specifying its requirements so that interpretation was left to the discretion of Administrations. This resulted in different countries having different procedures of administering and enforcing the Convention.

Other contributing factors were that the Convention prescribed only the practical experience onboard or other appropriate services without specifying the skills and competence required. These, plus the trend of shipping owners hiring cheaper crews of different nationalities and educational backgrounds under the flag of convenient conditions, did not improve the standard of competence onboard.

Thus, a decision by IMO was finally made to amend the STCW 78 in order to rectify and improve the standard of ship operation, and to prevent casualties and damage to the environment through proper implementation of the newly established STCW 95.

#### **4.1. Purpose of the Revision**

With the changes in the structure of the world merchant fleet and increased demands for safer shipping at an international level due to shipping disasters caused by, or related to human errors, there was growing concern and criticism from the international community of the Convention and its effect on the future of safety and needs of the traveling public as well as the protection of the marine environment from pollution.

In 1993, the Maritime Safety Committee gave high priority to a comprehensive review of the Convention undertaken by the Sub-Committee on Standards of Training and Watchkeeping with the following aims:

- To have IMO directly involved in coordinating between Parties the international standardization and proper implementation of the Convention.
- To transfer all technical detailed requirements to an associate Code.
- To clarify specifically the skills and competence required.
- To have Administrations maintain direct control over the certification system, MET courses and shipping companies' obligations to the Convention.
- To have the amendments enter into force as soon as possible.

The amendments were adapted in 1995 and came into force as of 1 February 1997 with a 5 year transitional period until 1 February 2002, as shown in figure 4.1.

#### **4.2. Amended Annex**

Due to legal and procedural reasons, the Articles themselves were not amended as it would take too long for such changes to be enforced, instead, only the technical Annex was amended using the "tacit acceptance procedure". The following is an overview of the chapters and the changes required of them in the new amendments.

■ an external review by an independent body or persons that are not involved in the above activities within a period not exceeding five years. This should be carried out by using prescribed information and documentation provided by the institute in advance, using the following guidelines:

- (i) systematic examination of all quality activities
- (ii) use of documented procedures
- (iii) documentation of evaluation results
- (iv) provision of results to those responsible for the areas evaluated
- (v) recommended timely action to correct any deficiencies

This is perhaps one of the most demanding requirements, especially in developing countries because of the parties and different bodies involved in both administration and academic levels, the amount of work needed in its planning and implementation and most of all the costs that may be incurred and how to meet them. This could lead to time consuming procedures and will result in countries still not being approved by IMO after the transitional period, 1 February 2002.

(c) Authority to Port State Control to intervene and stop a ship from sailing if they suspect deficiency onboard which may pose danger to persons, property or the environment.

(d) Mandatory use of simulators for training and assessment of competency in the use of radar and automatic radar plotting aids. This is a new requirement in the amendments with the aim of improving the standards of competency and skills by using modern training equipment and facilities.

(e) Requirements for ships personnel or officers to meet fitness standards and levels of competence after a specified time period of not more than 5 years, before revalidation of certificates in accordance with STCW 78. At the end of the transitional period, 1 February 2002, all certificates will be required to comply with the new amendments of STCW 95 otherwise they will not be revalidated until the mentioned amendments are met. This includes seafarers who are serving onboard or intends to return to sea after a period of time ashore.

(f) Establish procedures to investigate and penalize persons who have been issued certificates but have endangered safety or environment. This is to assure and maintain a high standard of safety and competence onboard to prevent maritime disasters.

(g) Introduction of a new regulation on ship companies' obligations and responsibilities on conditions of employment and onboard training of seafarers.

These include the following:

- assure that seafarers assigned to any of their ships hold the appropriate certificates in accordance with the new amendments
- ships are manned in compliance with the Administrations' safety manning requirements
- all the information and documents with regard to seafarers' experience, training, medical fitness and competency should be maintained and made readily available
- allocation of reasonable period of time for any seafarer employed on board to familiarize himself/herself with his/her assigned duties such as watchkeeping, safety, environmental protection and emergency procedures.

This is one of the major steps taken by IMO that did not exist before to ensure proper implementation and compliance to the new requirements with the inclusion of shipping companies and their stated responsibilities.

#### **Chapter V - Special training requirements for personnel on certain types of ships**

The new amendment now includes special requirements for training and qualifications of personnel employed onboard ro-ro passenger ships as well as crowd and crisis management and human behavior. In the old Convention, the only requirements were for crews of oil tankers.

This new change came as the result of one of the worst maritime tragedies, *Estonia*, September 1994, that really got the public to put pressure on IMO to revise and amend the old Convention. The required standards will not be adapted by the Maritime Safety Committee until May 1997 and full implementation by 1 August 1998.

#### **Chapter VII - Alternative certification**

This chapter includes the introduction of "functional approach" whereby crews are able to receive alternative certification by undergoing approved education and training in other departments as per new amendments rather than confining them to one specific type for the rest of their careers. Issuing of alternative certificates by any Parties shall only be allowed when the following additional conditions and principles are met:

- The Party must communicate information to IMO in accordance with article IV and regulation 1/7
- It is not to be used to reduce the number of crew on board
- It is not to lower the integrity of the profession or "de-skill" seafarers
- It is not to justify the assignment of the combined duties of the engine and deck watchkeeping officers to a single certificate holder
- It is not to affect the legal position and authority of a master or person in command by implementation of any arrangement for alternative certification

#### **Chapter VIII - Watchkeeping**

Measures have been introduced for watchkeeping personnel to prevent fatigue, i.e. enforcing rest periods for watchkeepers and ensuring that the watch system is so planned and arranged that efficient watchkeeping can be maintained by personnel without impairment due to fatigue. The above can be achieved by observing the following arrangements and principles:

- Administrations to be responsible in assuring that shipping companies and their responsible officers onboard should observe the requirements, principles and guidance set out in the Code
- Administration shall require the master of every ship to maintain and ensure safe watches under his/her direction for officers in charge of a navigational watch, radio or communication watch, engineering watch and safety watch when a ship is at anchor or carrying hazardous cargo.

### **4.3. STCW Code**

One of the main features of the Convention's revision is the adoption of the new Code which supports the Convention with a lot more specific details. This, in comparison with the STCW 1978, not only states the knowledge to be acquired but as well the skills to be achieved at the end of the course and how to achieve them. This was one of the weakness of the old convention which raised a lot of questions about its clarity and validity thus resulting in the new amendments.

It is divided into Part A which is mandatory and has equal status with the Annex Regulations. Part B is not mandatory but gives guidance on interpreting and applying the Convention and Code. It should be used extensively because it contains a lot of detailed information for proper interpretation and application. The advantage of dividing it in such a way is to make administering, revising and updating of it more simple. This is due to procedural and legal reasons, whereby there is no need to call a full conference to make any changes to the Code thus speeding up the process.

While the Convention's regulations contain the basic requirements, they are enlarged upon and explained in a lot more detail in the Code. Use of the Code is made easier by using the same series of numbering as in the Regulations, e.g. Regulation I/8 is enlarged upon in the Code, Section A-I/8 and explained in more details in Section B-I/8 etc.

The following is an overview of the main changes to the Code with regard to training, certification and their details.

### Training and Assessment

As of 1 February 1997, governments must ensure that training authorities and institutes as well as shipping companies when carrying out training and assessment activities onboard or ashore under the revised convention are conducted, monitored, evaluated and supported by suitably qualified persons and conform to written programs approved as meeting all requirements. These requirements apply to training and assessment for:

- certification of rating forming part of a watch
- service in ro-ro passenger ships
- emergency occupational safety, medical care and survival functions
- alternative certificates

These also include the revision of training programs and courses in all other training and assessment activities for certification under the revised convention as master and officers. Although there are similarities in the knowledge requirements between the STCW 1978 provisions and the STCW 1995 revised standards, training programs and their designs must be revised and changed to ensure that the skill and competency objectives of the new amendments are achieved.

### Competencies

The Code lists seven fields of competence which include navigation; cargo handling and stowage; control operation of the ship and care of persons on board; marine engineering; electrical, electronic and control engineering; maintenance and repair; and radio communications. Within the seven fields, all navigational, engineering, safety and marine environment protection tasks, duties and responsibilities are covered. Competency necessary to perform the above functions is divided into three

levels of responsibility. Management level which masters and mates are qualified for, operational level which watch keeping officers are responsible for and support level by ratings forming part of watch keeping.

In part A, one of the main changes in addition to those mentioned under the Amended Annex, is the minimum requirements for standards of competence of seagoing personnel in the Deck and Engine departments which are given in details in a series of tables. The tables consist of four columns which include competence, knowledge, how to demonstrate and evaluate them as shown in figure 4.2. This, if complied with accordingly will not only assess the knowledge of a student about the subject but very important as well, is a demonstration of their skills in carrying them out correctly.

Part B consist of recommended guidance for Parties to achieve compliance with the Convention and although they are not mandatory, they represent an approach that has been undertaken and harmonized as a result of consultation between IMO and other international organizations. This section gives detailed recommendations and explanations which will help a lot in clarifying most of the requirements under the Annex and part A of the Code.

#### **4.4. Resolutions**

Attachment 3 to the Final Act of the Conference consist of resolutions adapted from 3 to 14. The areas covered consist mainly of the following:

- a. **Promoting technical cooperation.** This should be promoted between developing countries with the help of IMO through the Maritime Safety Committee (MSC), in assisting each other during the transitional period until 1 February 2002. It urges Parties to take prompt action to implement the revised Convention and to promote technical cooperation at inter-governmental level to assist each other especially in areas where limited facilities and equipment are available to meet the training and certification requirements of the new Convention. It also invites the IMO to

extend its endeavors to provide assistance where required under its technical cooperation program.

- b. **Development of specialized training.** The following are the areas with which the resolution refers to.
- Training of radio operators for the global maritime distress and safety system (GMDSS) - this promotes and ensures that all officers in charge of a navigational watch are trained and certified appropriately to perform their designated radio communication duties onboard for the safety of life and property at sea as well as the protection of the marine environment.
  - Provide training in crisis management and human behaviour for personnel serving on board ro-ro passenger ships - this was agreed upon as an essential training for all key personnel on ro-ro passenger ships including the following elements: human behaviour and response, optimizing the use of resources, development of emergency plans, leadership skills, stress handling and communication. These are further clarified under part A of the code as well as how to assess and demonstrate competence.
  - Training of personnel on passenger ships - in addition to the above training for ro-ro personnel, the need to train ship's personnel towards the safe evacuation of passengers in emergency situations was also recognized. Such a training will also allow personnel designated for such responsibilities to assist their fellow crew members who are not specially trained for such emergency situations.
  - Training of maritime pilots, vessel traffic personnel and maritime personnel employed on mobile offshore units - the resolution calls for IMO to develop provisions covering the training and certification of the above personnel.
- c. **Monitoring the implications of alternative certification.** This provision is under chapter VII of the revised annex and as recognized, it may be interpreted and implemented in different ways by Parties to the Convention. Thus, the Maritime Safety Committee is responsible in monitoring and reviewing its implementation with the following aims:

- to identify the alternative certification system used in compliance with chapter VII
- to determine if any revisions of the Code are required to ensure that it is adequate and effective
- to develop further and clarify the application of the principles contained under the regulation.

The above provisions will prevent use of the alternative certification system as a means of reducing crew numbers which may prejudice the safety of the ship, its operation and the protection of the marine environment.

- d. **Development of international standards of medical fitness.** IMO has noted the lack of an agreement for the standards of medical fitness for seafarers. It therefore invites cooperation with the World Health Organization and the International Labor Organization to develop international standards of medical fitness for seafarers.
- e. **Promotion of technical knowledge, skills and professionalism of seafarers.** The importance of onboard service and training is recognized as one of the key elements in the successful implementation of the Convention. The resolution therefore consists of recommendations to Administrations to ensure that shipping companies comply with the requirements especially in the areas of standard of competence, skills and direct participation in junior personnel's training.
- f. **Revision of IMO model courses.** The contribution made by the model courses in implementing the STCW 1978 was very positive and the Conference therefore recognized the need to revise and update them to accommodate the new requirements and their standards to achieve better uniformity in training and assessment provisions.
- g. **Contribution of WMU in the achievement of enhanced standards of maritime training.** To implement the Convention successfully, properly trained and competent personnel are required, especially in developing countries. The Conference recognized that in addition to the promotion of technical cooperation,

the graduates of WMU can play a major role in the implementation of the convention in all areas because of the resources and expertise offered and available at the university. It also recommends strongly for governments to support and utilizes the resources of WMU to meet their needs for highly qualified maritime lecturers and administrators.

- h. **Promotion of women's participation in the maritime industry.** The Conference expressed its desire to achieve equal opportunities for men and women to be employed onboard and invites governments to give this special consideration in all sectors of the maritime industry. As well, the role of women should be highlighted and promoted by greater participation in the seafaring profession.

#### **4.5. Effects of the new STCW 1995 to MTC and other ratings schools in the Pacific.**

##### **4.5.1. Legislation**

In the Pacific region, most of the island nations namely: Cook Islands, Fiji, Kiribati, Marshall Islands, Niue, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu and Western Samoa have acceded to the 1978 STCW Convention. However, all of them will have to make changes by 1 February 1997 to incorporate all the mandatory provisions of the STCW 1995 Convention's articles, regulations and code in their national law.

This is the first major step that has to be undertaken by any nation in adapting the new amendments. This will have a direct effect on the training and assessment procedural developments in adapting the amendments because any changes to the legislation or act is a long and time consuming process due to legal and departmental procedures that have to be followed. As well, the level of priority is another determining factor as such procedures can only be speeded up if there is a direct threat to the national economy.

In Western Samoa, the new updated Shipping Act which includes provisions for adapting the STCW Convention and the Code will be tabled in Parliament during their 1997 session pending on their order of priority.

#### **4.5.2. Administration**

In accordance with new requirements, governments will have to develop and implement an administrative system to undertake all the responsibilities and measures required of them. In Western Samoa, this is directly under the Ministry of Transport. Although there is a system used mainly for certification of seafarers, major changes will have to be undertaken in order to comply and satisfy the requirements. The current government procedure includes appointment of a special committee to carry out a feasibility study and report back to cabinet for consideration. If accepted, properly qualified and competent personnel will then be appointed to coordinate, plan and make appropriate recommendations to the ministry for approval and implementation.

This again takes time and will greatly influence any efforts by the school board of directors and management to achieve their objectives and stay within the required time frame of the code's implementation.

#### **4.5.3. Training and Assessment**

To achieve the goals set by individual institutes in the Pacific region to comply with and be included in the IMO white list, a lot of effort will have to be undertaken by the institutes in the preparation and presentation of proposals to convince and assure positive results from their governments and shipping industries. For example, the institute or their representatives whenever possible or given the chance, should take the lead and be consistent in whatever areas they are involved in during the whole process.

This, from experience is one of the best methods in getting things moving in some, if not most, developing countries. This is because, although the weight and level of responsibilities for implementation of the amended convention is directed more towards the government in comparison to the training institutes and the shipping companies, the reality is that, if the institutes do not play a leading and efficient role, then delays which may lead to non compliance with the stated time frame, can be expected.

As well, the training institutes must develop a closer working relationship with the shipping companies in coordinating training and assessment both ashore and onboard.

The training institutes in addition to the above must also undertake their internal demanding tasks of:

- upgrading and re-designing the curriculum, training syllabus and assessment methods in accordance with the new amendments
- setting qualification standards for all teaching staff and plan training and development accordingly if required
- carrying out a survey of equipment currently available for teaching if they are sufficient to meet the stated requirements of training and assessment and make appropriate recommendations and replacements
- planning and developing strategies to comply with the internal review requirements under the quality control system and later with the external review
- preparing and forwarding progress reports and information required by IMO for consideration and approval, through government.

#### **4.5.4. Conclusion**

As discussed above, all training institutes, whether big or small, should and must be directly involved in the whole process of implementing the amendments, not only within their parameters of operation but very importantly, using their influence in getting all of the other parties involved to get the ball rolling right from the start.

This is an essential ingredient required of training institutes in the Pacific due to the low level of priority given to maritime issues by governments because of the lack of awareness by local decision makers of the importance and the long term positive results to shipping and the environment of the amended convention on a national, regional and international level. As mentioned before, only when it is a direct threat to the economy or when a maritime disaster occurs will such awareness exist.

On the other hand, the amendments will have a positive contribution to the institutes of the region because:

- it will create a major step in developing better cooperation between the institutes in harmonizing and standardizing maritime training and certification in the region thus achieving the goals of the amendments to improve the standard of safety in shipping on a globally recognized level and reduce threat to the marine environment.
- it will ensure a better chance to fulfill the requirements of the amended convention with direct assistance from IMO on a regional basis and in turn to the national level for each of the island nations' institutes.
- it will enhance a positive step for Pacific seafarers to reach a higher standard of competency and skills so that they can be recognized and considered for employment by foreign ship owners and enable them to contribute in earning foreign exchange for development of their individual countries and families.

Figure 4.1

## 5 YEAR TRANSITIONAL PERIOD TIME SCHEDULE FOR IMPLEMENTATION OF STCW 1995

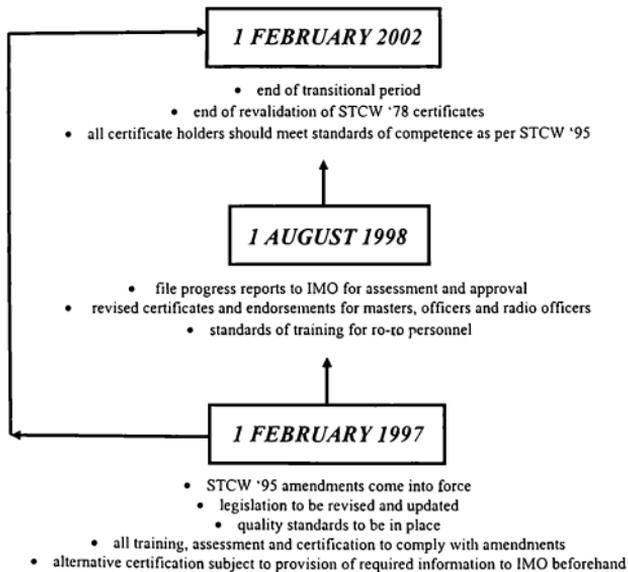


Figure 4.2.

Table A-III/4

Specification of minimum standard of competence for ratings forming part of an engineering watch

Function: Marine engineering at the support level

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
<p>Carry out a watch routine appropriate to the duties of a rating forming part of an engine room watch</p> <p>Understand orders and be understood in matters relevant to watch-keeping duties</p>	<p>Terms used in machinery spaces and names of machinery and equipment</p> <p>Engine-room watchkeeping procedure</p> <p>Safe working practices as related to engine room operation</p> <p>Basic environmental protection procedures</p> <p>Use of appropriate internal communication system</p> <p>Engine-room alarm system and ability to distinguished between the various alarms, with special reference to fire extinguishing gas alarms</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <ol style="list-style-type: none"> <li>1. approved in-service experience</li> <li>2. approved training ship experience; or</li> <li>3. practical test</li> </ol>	<p>Communications are clear and concise and advice or clarification is sought from the officer of the watch where watch information or instruction are not clearly understood</p> <p>Maintenance, handover and relief of the watch is in conformity with accepted principles and procedures</p>
<p>For keeping a boiler watch:</p> <p>Maintain the correct water levels and steam pressures</p>	<p>Safe operations of boilers</p>	<p>Assessment of evidence obtained from one or more of the following:</p> <ol style="list-style-type: none"> <li>1. approved in-service experience</li> <li>2. approved training ship experience; or</li> <li>3. practical test</li> </ol>	<p>Assessment of boiler condition is accurate and based on relevant information available from local and remote indicators and physical inspections</p> <p>The sequence and timing of adjustments maintains safety and optimum efficiency</p>
<p>Operate emergency equipment and apply emergency procedures</p>	<p>Knowledge of emergency duties</p> <p>Escape routes from machinery spaces</p> <p>Familiarity with the location and use of fire-fighting equipment in the machinery spaces</p>	<p>Assessment of evidence obtained from demonstration and approved training ship experience</p>	<p>Initial action on becoming aware of an emergency or abnormal situation confirms with established procedures</p> <p>Communication are clear and concise at all times and orders are acknowledged in a seaman-like manner</p>

# CHAPTER V

## Changes Required of MTC to comply with STCW 95

As in most small developing countries like the island states in the Pacific region, a lot of changes will have to be made to adapt and comply with the new STCW 95 amendments. Although the island states' maritime administration and institutes are currently being assisted on an advisory level by a regional organization, the core of the work and changes required, still lie within the hands of each nation. With the amendments already effective as of 1 February 1997 and the reports for changes undertaken to be forwarded to IMO by 1 August 1998, it may not be possible to stay within the above time frame. The writer intends that the following recommended changes for his institute will assist not only his own, but as well, other similar institutes in the Pacific for training ratings, in meeting the requirements. As discussed in Chapter IV, the specific changes required of such training institutes should comply with the provisions under the amended Annex and Code which may be summarized under the following:

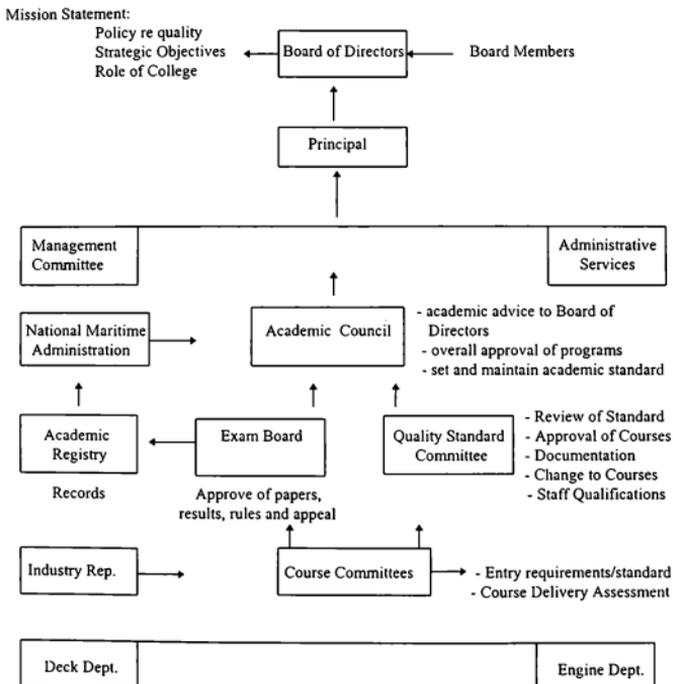
1. Types and level of MET courses conducted, how they are assessed and the qualifications of trainers and assessors (Reg.I/6, Sec.A-I/6).
2. Implementation of a quality standard system (Reg.I/8; Sec.A-I/8).

Considering the above mentioned areas for changes to comply with the amendments, it will only be appropriate to start by planning and designing the changes *within* the framework of the Quality Standards System required by the Amendments. This, in

addition, will also ensure that any recommendations should comply with both the internal and independent evaluation requirements of the system, thus preventing the time consuming process of re-designing it if it doesn't.

## 5.1. Structure - Academic and Administration

*Figure 5.1. COLLEGE FLOW PLAN*



With reference to the above organizational structure, the following is a breakdown and detailed explanation of the different parts and their functions in administering and monitoring the system.

### **1. Mission Statement**

The Marine Training Center is the Western Samoan Government national institute which provides maritime training for local seafarers and students employed by the national and international shipping industry.

The mission of the Marine Training Center is to provide the highest standard and quality of maritime training and assessment to achieve its stated goals and objectives in accordance with the requirements of international maritime conventions, such as the STCW 95 Amendments to the STCW 1978 Convention.

#### **1.1. Main Goals:**

- To introduce and provide training for local seafarers that are employed by the shipping industry and any student who wants to pursue a career as a seafarer.
- To develop and implement training courses to the required standard of competence so that they can be recognized and accepted by IMO and the shipping industry at all levels.
- To establish and maintain a high level of staff training and qualifications standards to ensure excellence in teaching and assessment methods and procedures.
- To enhance corporation and working relationship with the administration and shipping industry for successful implementation of the amendments.
- To promote MTC as one of the leading maritime institutes in the Pacific region for the provision of well trained and competent seafarers within the type and level of courses it offers.

### **2. Board of Directors**

The board is the overall governing body for the school. The chairman and members are appointed by Cabinet as stated in Chapter I (Fig. 2.1.), in accordance with

government's existing policies. Its functions include discussions and final approval of budgetary proposals, development and /or changes to training programs and maintain monitoring of the school's general operation.

### **3. Principal**

**Internal Functions:** The Principal is responsible to the Board for proper administering and running of the school on a day to day basis. In addition, he/she is directly responsible to prepare and present to the Board reports on management of its financial budgetary operation, implementation of any resolutions and as well, presentation of any proposals from the different academic and administrative boards and committees.

**External Functions:** The Principal should represent the school on a national, regional and international level. He/she should be directly responsible in spearheading activities to seek funds especially from external sources e.g. foreign donor countries and international organizations, for school development and upgrading projects.

### **4. Academic Council**

It will be responsible for providing academic advice to the Board of Directors within the following:

- the overall approval of institute programs and courses
- the setting and maintaining academic standards i.e. statutes, rules and regulations
- the examination and evaluation of reports from quality standard sub-committee, course teams etc.
- As final arbiter of student progress

### **5. Quality Standard Committee**

It can be referred to as the backbone to the quality standard system and will be responsible for:

- a. approving any new or revised training scheme, its documentation and application of regulations to govern the scheme such as entry standards, resource requirements for effective delivery and management of scheme.
- b. creating and developing a syllabus providing statements of aims of the scheme, its objectives in terms of knowledge, understanding and skills with reference to STCW 95 standards of competency. In addition, a statement of supporting staff, facilities and resources as well as assessment methods and how standards of competency can be established must be provided.
- c. the development and statement of course components, i.e. module, units and subjects which should be supported by a summary of specific objectives, course content, teaching methods and assessment methods.
- d. establishing and implementing a monitoring mechanism for the training scheme by conducting regular committee and board meetings. As well, ensure feedback from students, external examiners, accreditation bodies and inputs from national maritime administration.

#### **6. Exam Board**

The main functions of this board will be the vetting and approval of examination papers as well as examination invigilation.

#### **7. Academic Registry**

It will be responsible for exam papers, model answers, students' compliance with entry requirements, proper organization and keeping of academic records.

#### **8. Course Committees**

These committees will involve all the instructors in administering their specific courses as well as setting detailed rules in liaison with the shipping industry regarding preparation of shipboard training programs, students' progression, assessment and marking of exam papers.

## **5.2. Course curriculum, teaching syllabus and assessment of skills for competence for Multi-Skilled Ratings training program.**

The current training program for ratings offered and conducted at the Marine Training Center is of the traditional monovalent scheme for deck and engine streams. The change in shipping technology and the effect on the type of seafarer demand and their training background now calls for changes to merge the two together as one to become a multi-skilled rating. This will allow for better flexibility on what the seafarer is competent to do, especially with the current international trend in reducing the number of crew onboard and shipowners' demand for skillful seafarers rather than academically qualified trained ones.

This was experienced over the past eight years in Western Samoa whereby the foreign shipping owner that employs the majority of MTC graduates had a greater demand for nautical ratings compared to engineering ratings, most of the time.

With the adoption of a multi-skilled training program, such problems should be reduced and rectified. It will enable future graduates to meet the challenges incurred due to the new developments in the design of ships, their machinery and the technology involved in the whole ship system of the future and their safe operation. In addition, it will prepare the ratings for working more closer together onboard as one team thus removing the traditional barriers between deck and engine departments. This is now one of the core elements in harmonizing the working environment onboard and the successful implementation of the convention's amendments.

The following recommendations result from studying and considering what is currently practiced and used by maritime colleges and academies around the world such as in Australia, Japan and Germany. They represent some of the leading institutes in the development and use of dual-purpose or multi-skilled ratings' training programs for a number of years now. This is due to their early identification and recognition of ship manning changes and their needs in association with modern ship design and technology.

### **5.2.1 Course Curriculum**

(i) **Title:** Certificate as Multi-Skilled Rating - Grade 1 & 2

(ii) **Aims:**

- To introduce and provide new ratings with the competence and skills required of them to carry out their duties onboard in accordance with the Amendments to the STCW 1978 Convention (STCW 95 Convention and Code.)
- To conduct the training in such a planned educational framework as to enable the ratings to demonstrate practically that they can meet the demands and challenges in different working environments onboard with confidence.

(iii) **Objectives:**

At the end of the course, the student has:

- gained a basic knowledge of and is able to demonstrate skills in watchkeeping duties, general shipboard operations and maintenance
- full awareness and commitment to safety and effective working practices onboard
- developed skills and understanding on how to be fully responsible for his/her actions and can perform functions or tasks as a member of the team onboard, accordingly
- appropriate knowledge of national and international codes and regulations for work onboard ships

(iv) **Entry Requirements:**

To be accepted for the entrance exam, applicants must meet and provide the following:

- a. be not less than 16 years old
- b. have satisfactorily completed year 12 at a secondary school or be a graduate of the Polytech in a technical course

- c. provide a valid medical certificate which includes eyesight test, hearing test and chest X-ray,
- d. provide a clean police report

**(i) Course Structure:**

The current course structure for ratings used by MTC as shown in Chapter 1 is carried out in a sandwich type scheme. This is carried out by the new recruits undergoing a pre-sea training for 1 year, sea service of 2 years and then following an upgrading course for 3 months at the school before receiving an AB or Motorman's certificate of competency. The assessments are conducted at the end of both the pre-sea training and the 3 months' upgrading course. Only students that pass both assessments will complete the course successfully and be qualified for the certificates. Students who want to continue their studies to become officers can be undertaken with other institutes in the region that offer such courses e.g. Fiji, Australia and New Zealand.

So far, the above system is working well with minimal problems due to the following:

- proper introduction and pre-sea training in contrast to their traditional backgrounds thus allowing students to familiarize themselves effectively with what is expected of them onboard and how to live and work together as a team
- the system has only selected those who were competent academically and skillfully on basic deck and engine ship knowledge

With the above reasons, plus the writer's personal experience, it would only be appropriate to develop a structure based on the above principle taking into account the human factor needs and requirements of the amendments. It will also facilitate the changes from the current to the new proposal, thus reducing problems associated with introducing a complete new one.

Considering all of the above, the proposed structure should be as follows:

PHASE	PLACE	DURATION
1	MTC	9 months
2	Onboard	12 months
3	MTC	3 months

#### Phase 1

This semester will consist mainly of introductory subjects on the competence and skills required of a multi-skilled rating. These consist of basic and safety training so that they are familiar from the very beginning of their training with the importance of such knowledge in preparing them for any type of emergency onboard. As well, they will be taught all the basic knowledge and skills they require as introduction to such areas as ship operation, watchkeeping and ships' machinery and systems. At the successful completion of phase one, which includes an assessment by the school, the ratings will be issued with a Grade I certificate which qualifies them to the *support level* only.

#### Phase 2

This will be the students' sea time experience onboard as one of the crew members and will participate in the general ship's operation. The student's status onboard will be as a normal rating.

As required under the amendments, the rating will undertake an approved onboard training program which should be properly documented in a training record book, and be under the supervision of qualified officers.

#### Phase 3

The requirement for entry is proof of proper completion and documentation of the approved onboard training from the ship's master. The last semester will allow the student to show and express the level of knowledge and practical skills gained after the two semesters. This will also give the school up-to-date feedback from students on their experiences onboard which can be used to improve future training programs and keep the school in line with developments onboard.

The course will then be used to top up any skills still required to fulfill the requirements especially in carrying out their specific duties on a competence level required of them onboard. Finally, students will undergo their final assessment which will be set and conducted by the Administration. If successful, they will be awarded with the appropriate certificate of competency as a rating forming part of a watch, Grade II.

**(vi) Course Contents**

The following course units are based on the curriculum currently conducted at the school which will be updated and re-written to include and comply with the format given in the amendments, which should show clearly the methods of assessing competence and skills.

***Phase 1***

<u>UNIT</u>	<u>DURATION (HRS)</u>
1. Safety	
1.2. Personal Survival	60
1.3. Basic Fire Fighting	60
1.4. First Aid	40
1.5. Personal Safety and Social Responsibilities	20
2. Trade Subjects	
2.3. Ship Handling and Operation	210
2.4. Cargo handling	210
2.5. Rigging Technology	210
2.6. Workshop Theory and Practice	210
2.7. Engine Knowledge	210
2.8. Maintenance	210

***Phase 2***

Onboard Training	2080
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***Phase 3***

3.1. Ship Handling and Operation	120
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3.2. Cargo Handling	120
3.3. Engine Operation	120
3.4. Maintenance Procedures	120
<b>Total Duration</b>	<b>3820</b>

### 5.1.5. Unit Content

#### 1. Safety

**Aim:** To provide an introductory knowledge and basic training to attain skills as per amendment requirements in standards regarding emergency, occupational safety, medical care and survival functions.

**Objectives:** After successful completion of the safety courses, students should be able to:

- communicate clearly with other crew members onboard and thoroughly understand all the elementary safety procedures, information symbols, signs and alarms
- react accordingly if:
  - a person falls overboard
  - fire or smoke is detected
  - fire or abandon ship alarm is sounded
- identify muster and embarkation stations and emergency escape routes
- locate and don lifejackets
- raise 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
- locate, close and open the fire, weathertight and watertight doors fitted in the particular ship other than those for hull opening

#### 1.1. **Syllabus:**

- a. Personal survival techniques and procedures
- b. Fire prevention and fire fighting techniques and procedures
- c. Elementary first aid

- d. Personal safety and social responsibilities

## **2. Trade Subjects**

### **2.1. Ship Handling and Operation**

**Aim:** To provide students with basic knowledge of:

1. How to practice a safe look-out, steering and other duties required of them as part of the bridge team
2. Safe operation of anchor and mooring equipment
3. Ships structure and main parts

**Objectives:** At the successful completion of the course, students will be able to assist and work under supervision as a team member to:

- carry out a safe lookout by sight and hearing
- steer the ship correctly under proper helm orders
- assist and contribute in maintaining a safe watch
- participate safely during mooring and anchoring operations at the forward and after mooring stations

#### **2.1.1. Syllabus:**

- a. Ship structure
- b. Bridge operation
- c. Watchkeeping
- d. Arrival and departure operations on the bridge and mooring stations
- e. Introduction to meteorology

### **2.2. Cargo Handling**

**Aim:** To provide students with a basic knowledge of:

1. Cargo handling equipment and their safe operation and use
2. Cargo types, their hazards, care and safe carriage

**Objectives:** At the successful completion of the course, students should be able to assist and carry out safely under supervision:

- cargo watch under sail and in port
- receiving, stowing, securing and care during loading and discharging of cargo
- maintenance of gears and hatches

#### **2.2.1. Syllabus:**

- a. Cargo Systems and Characteristics
- b. Cargo Care and Safety
- c. Cargo Gear and Hatch Maintenance

### **2.3. Rigging Technology**

**Aim:** To provide an introductory knowledge of:

1. Basic seamanship skills and their safe use and application onboard
2. Rigging gears and equipment and how to use them safely

**Objectives:** At the successful completion of the course, students will be able to:

- identify, apply correctly and work with different ropes and wires
- safely make knots, splicing, whipping and rigging required onboard
- select the right type and safe working load (SWL) for ropes, blocks, tackles and shackles for safe application and use onboard

#### **2.3.1. Syllabus:**

- a. Construction and characteristics of different rope and wire materials.
- b. Preservation and protection of wires and ropes and their preparation for use.
- c. Knots, bends and hitches.
- d. Splicing of rope and wire.
- e. Types of blocks and tackles and their safe use and applications.
- f. SWL and BS of ropes, blocks, tackles and shackles.

### **2.4. Workshop Theory and Practice**

**Aim:** To provide and train students with basic information and skills in:

1. Identifying different types of materials and their applications.
2. The proper use of tools for fabrication and maintenance.
3. Observing and following safety practice and procedures in a workshop.

**Objectives:** At the end of the course, students will be able to carry out safely under supervision:

- working practices in carrying out metal fabrication using cutting tools and machinery, welding, soldering, and bending equipment
- proper maintenance and safe use of tools and equipment

#### **2.4.1. Syllabus:**

- a. Working materials
- b. Workshop theory
- c. Bench practical work
- d. Joining techniques
- e. Maintenance of workshop, tools and equipment

### **2.5. Engine Knowledge**

**Aim:** To provide students with introductory knowledge of:

1. The types of engines used in marine propulsion and as auxiliaries.
2. The principles on how they operate and their main parts.
3. The basic systems used by or in connection with marine engines.

**Objectives:** After successful completion of this subject, students will be able to:

- identify and have basic knowledge about the different engines and related systems used by ships
- assist under supervision in the care and maintenance of engines
- participate and observe the duties of an engine watchkeeper
- practice safety precautions when working near or within the vicinity of a running engine and machinery

#### **2.5.1. Syllabus:**

- a. Diesel engines.

- b. Engine auxiliaries
- c. Circulating systems
- d. Electrical devices
- e. Machine elements

## **2.6. Maintenance**

**Aim:** To provide students with introductory knowledge about:

1. General shipboard maintenance.
2. Basic machinery and equipment repairs.
3. Safe maintenance practice

**Objectives:** After successful completion of the subject, students will be able to work as a team member under supervision to safely:

- locate and carry out maintenance of corroded or damaged surfaces using proper surface preparation procedures, paint, tools and equipment
- dismantle, repair and reassemble simple machines and equipment

### **2.6.1. Syllabus:**

- a. Corrosion in marine environment.
- b. Surface preparation.
- c. Paint systems.
- d. Simple machine repairs and overhaul.
- e. Maintenance of workshop, tool store and equipment.

## ***Phase 2***

As part of the course and a requirement under the amendment, an approved in-service onboard will be undertaken. The scheme will be implemented during the 12 months sea time experience phase under the following aims and objectives.

**Aims:**

1. To train and equip the ratings with the competence and skills in general ships operations in consistence with their level of duties and responsibilities onboard.

2. To enable them to appreciate and adapt with confidence the demands and opportunities of the team approach to shipboard management.

**Objectives:**

- a. To provide the ratings with basic knowledge of, and skills in watchkeeping, general shipboard operations and maintenance.
- b. To develop skills and understanding to the acceptance of personal commitment to individual tasks and performing as part of a team.
- c. To ensure adoption by ratings to safe and effective working practices in all areas.
- d. To ensure an appropriate knowledge of rules, regulations and other relevant safety codes governing work onboard.

A written 'Task and Guided Study'(TAGS) program will be coordinated between the institute and industry covering the following unit content area:

1. Familiarization
2. General ship systems
3. Maintenance
4. Watchkeeping
5. Arrival and Departure
6. Cargo Work

The TAGS program is designed to enhance their initial experiences by requiring trainees to undertake a series of related practical tasks in the workplace. To ensure proper control and implementation of the training program, written guidelines for students and the responsible training officers onboard must be included. For the latter, these will include their responsibilities, methods of monitoring students performance and progress and how to record them accordingly.

### ***Phase 3***

As described under the course structure, this phase is the last part of the training program for ratings and its purpose is to finally prepare and train them using the knowledge and skills they have attained after the 2 phases as per following:

**Aim:** To top up all the competency required of the ratings as per the amendments, to be qualified as a '*Rating forming part of a navigational or engineering watch*'.

The unit content aims and objectives are the same as phase 1 and the specific trade subjects selected for this phase are to ensure achievement of the above aim in watchkeeping.

**Syllabus:**

- a. Ship handling and operation.
- b. Cargo handling.
- c. Engine Operation.
- d. Maintenance procedures.

**5.2.1. Assessment**

All of the assessment information for each subject will be in a written form as required by the amendments under the Code. They will be presented in the competence table form under the columns covering:

1. Competence
2. Knowledge, understanding and proficiency
3. Methods for demonstrating competence
4. Criteria for evaluating competence

The methods of assessment used will depend on the objectives and how to achieve them. For assessing the students' level of understanding and knowledge of a subject, written exams will be used in the form of short answers and multiple choices. Practical exams will be used to assess the students' level of practical skills and will be in the form of oral exams and practical demonstrations.

With regard to onboard training, the evaluation of the training record book and approval should be carried by the school and the administration to ensure proper compliance with the written guidelines agreed between the administration, school and shipping industry. This will be part of the entrance requirement to the last phase of the training program and issuing of certificates.

### **5.3. Staff qualification and experiences**

This is one of the big challenges to governments and training institutions in meeting their responsibilities under the amendments to the Convention. With all the changes required and, no matter how good and impressive the structures and training programs may look, they can only be implemented successfully by properly trained and well qualified teaching personnel. In other words, the human resource is of vital importance in the whole process and should therefore be given high priority not only in training but as well to retain it within the system for continuous and long term success of the required improved standards. This is supported in a statement by Muirhead (1997, page 2) as:

‘Human resource development must go hand in hand with implementation of this major IMO initiative’

Under section A I/6 of the Code, seafarer training and assessment is required to be conducted, monitored, evaluated and supported by instructors, supervisors and assessors who are appropriately qualified for the particular types and levels of training or assessment, either on board or ashore.

One of the major problems faced by small institutes in developing countries is retaining staff especially after sending them for further training and certification as officers. This is mainly due to better employment conditions and salaries that are offered to them by the shipping industry. Part of the solution to the problem is for the administration, institute and shipping industry to co-ordinate in a form of agreement to ensure that instructors who have attained any training and qualification through the institute should be subjected to a specified time for which they should be committed in working for the institute until they have achieved and fulfill the training needs of the institute by teaching subjects to the level of qualification and competence they hold. In addition, institutes must make every effort in developing and improving working conditions by offering better monetary and personal achievement goals.

The following recommendations are for instructors and trainers.

### **5.3.1. Qualification**

#### **Nautical**

Each instructor must hold a certificate of competence as an officer in charge of a navigational watch for vessels 500 gross tonnage or more.

#### **Engineering**

Each instructor must hold a certificate of competence as an officer in charge of an engineering watch in a manned engine-room for vessels powered by main propulsion machinery of 750 kW or more.

### **5.3.2. Experience**

The minimum practical experience of instructors onboard should be 5 years of which 2 years experience as an officer in charge of a watch on foreign going ships is included.

### **5.3.3. Pedagogical Requirement**

All new instructors must undergo and successfully complete the following courses as a mandatory requirement for employment, before taking any active part in teaching:

1. IMO Model Course 6.09 - *Training Course for Instructors*
2. IMO Model Course 3.12 - *Examination and Certification of Seafarers*

The above courses should be conducted by qualified personnel of the school and appropriate certificates issued at the completion. The new teaching staff will then undergo a teacher's supporting level role for a minimum of 3 months to observe and build up their confidence, especially in the areas of lesson planning and presentation.

## **5.4. Teaching Aids and Equipment**

As stated under the quality standards requirements, one of its main goals is to ensure achievement of education and training objectives by carrying out internal and

external quality assurance reviews. To achieve the above goal, teaching aids and equipment are one of the determining factors for its success especially with training and assessing of not only the knowledge, but as well, competence skills.

A survey of what is currently available in MTC will be carried out and corrective actions taken to upgrade teaching aids and equipment to meet the needs of training and assessment procedures. In addition, the school as it has done up to now, should coordinate and develop a closer cooperation with the shipping industry. This is by planning as part of the pre-sea training, regular study trips onboard their ships and ferries to observe and familiarize students with instruments and equipment used onboard.

## **5.5. Legislation**

Under the proposed revised Western Samoan Shipping Act to be passed by Parliament during 1997, the following provisions are stated with regard to the STCW Convention and Code:

1. Subject to the Act and to any other law, the STCW Convention and Code shall have the force of law in Western Samoa.
2. Any regulations made under the Act may make provisions for the implementation of the STCW Convention and giving effect to the Code.
3. Manning of a vessel registered under the Act shall comply with the requirements of STCW Convention or observe the Code otherwise conviction to a fine will be imposed.
4. Where, under the STCW Convention or the Code, States-parties have discretion to take any action, that discretion may be exercised by the Minister.
5. Give effect to or implement requirements of the Convention or Code with respect to education and training subject to the conditions set down in Article IX of the Convention.

6. Implementation by the Ministry of Transport (MOT) or any other designated agency or persons designated by MOT, the Government's obligations or duty pursuant of the Convention or the Code requirements.

As stated in part 2, if required for the implementation of the STCW 95 Amendments or any future changes to the Convention, provisions for such regulations can be made under the Act, thus reducing the time to process and implement future changes.

# CHAPTER VI

## CONCLUSIONS AND RECOMMENDATIONS

### **1. Conclusions**

The changes required of maritime training institutes and their training methodologies to meet the amendment requirements are based on the concept of *competence*. Knowledge alone is not sufficient anymore to meet the challenges imposed by the international public as a result of maritime casualties and the fast development in ship technology. Thus, competence is now defined as the *knowledge and skills* required to safely perform functions onboard. As well, stating what steps each country will take to achieve compliance with the amendments is insufficient to prove that such steps have been undertaken. Therefore, one of the main purposes of the amendments is to ensure that administrations, training institutes and the shipping industry will all work together to carry out what they have stated they will undertake in order to comply with the STCW95 Amendments. One of the questions now being asked is how governments, institutes and the shipping industry, can achieve compliance, within the limited time frame given.

Considering all of the amendment requirements, the changes required of a training and assessment system should be carried out after proper evaluation of each and every part of the training program including how it is currently functioning as compared to the new requirements.

Thus, the proposed changes include defining more clearly the mission and aims of MTC with an updated organizational structure that encompasses both administrative and academic functions. As it is not clearly defined or written under the current system, this should give the school and its management a better perspective of the long term future of the school and use it as a foundation to make productive decisions upon which the school can function efficiently and successfully.

A new dual purpose or multi-skilled training scheme for ratings is recommended which will allow students to perform functions in both the deck and engine departments. This is due to the global trend in the reduction of crew numbers as a result of modern ship design and technology. As well, this will increase the students' level of safe working awareness onboard instead of confining to one particular sector. One of the advantages of such a training scheme as experienced by some countries e.g. France, is that graduates had better chances of getting employment opportunities onboard and ashore. In Western Samoa, this will also help solve some problems already experienced regarding different demands for ratings.

The course curriculum has been revised and updated accordingly to suit the new training structure and demand which is based on the concept of a *competence-based qualification*. The subject content will basically be the same and will be revised to clearly identify their objectives, methods of teaching and assessment. The onboard training phase of the course will use a scheme e.g. TAGS, which gives a better quality control of what the students have to achieve at the end of their training. This includes proper written guidelines and requirements that should be followed and complied with by both the students and trainers.

One of the most important questions raised for the successful implementation of the amendments is whether there are enough qualified personnel to undertake all of the new requirements and changes. Thus, teaching staff qualifications and experience will have to be reviewed and corrective action be undertaken to meet the "*appropriately qualified*" requirements of the convention. This will include developing qualification standards and an upgrading training program for teaching

staff. One of the key factors in determining the long term success of the convention is how training institutes can retain or keep their staff if better working conditions are offered to them from outside e.g. the shipping industry. It is therefore only appropriate that staff career and personal incentives should be promoted and considered seriously during the staff hiring process. As well, proper control through working contracts and coordination with possible outside employers must be looked at.

Proper implementation of a training and certification program will also depend on how reliable and efficient the equipment and teaching facilities are. It is recommended therefore that a survey of all equipment should be undertaken. Corrective action should then be taken in upgrading and replacing it where necessary to meet the competency training and assessment needs.

One of the newest and perhaps the most demanding requirement in the amendments is the introduction of a 'Quality Standards' system to ensure effective implementation of proposed changes and proper compliance with the amendments. It is recommended that the quality standards committee under the new organizational structure, will be directly responsible in coordinating with all the sectors involved i.e. national administration and shipping industry; and the development and implementation of the quality standards system which will include both the internal and external evaluation requirements. As there is no specific system stated in the convention, the system to be adapted should be one that will enable quality to be achieved which may be within a national scheme or an alternative model that is acceptable to IMO.

Finally, to meet the requirements and implementation deadline for the preparation and communication of information to IMO of the steps undertaken by MTC to comply with the amendments, the institute will have to take up a major role and responsibility in cooperation with the administration and shipping industry to facilitate and speed up the process to stay within the prescribed time frame i.e. 'by 1 August 1998 or within one calendar year' of entry into force of regulation I/7 for

Western Samoa, whichever is later<sup>9</sup>. This can also be achieved by taking into careful consideration compliance with the draft procedures recommended by the Maritime Safety Committee during its sixty-eighth session, 18 February 1997 (MSC 68/5/1 Agenda item 5). They include the following:

1. Draft procedures for the selection and method of work of competent persons referred to in section A-I/7 of the STCW Code
2. A draft Format for the report requested of the Secretary-General pursuant to paragraph 9, section A-I/7 of the STCW Code
3. A draft Aid for the consideration of material communicated in accordance with STCW regulation I/7 and section A-I/7 of the STCW Code.

The latter is further clarified under Annex 4 MSC 68/5/1, whereby the draft Aid states details of what information should be communicated to IMO by a Party to indicate that it is *complete* and *sufficient* to sustain a conclusion that it “confirms that full and complete effect is given to the provisions of the STCW Convention”, in accordance with paragraph 2 of regulation I/7. As a result of the above proposed drafts, the Committee has prepared an updated table to assist the competent persons selected by the Secretary-General in considering the information communicated by Parties to the STCW Convention (Comparison Table), as of 6 June 1997 MSC 68/1/4 (Appendix 1).

In conclusion, the amended STCW Convention may not look very easy to comply with from a training institute point of view, due to complications not only within the institutes themselves but as well the other parties which are also directly involved in the overall process, e.g. Administrations and Shipping Industry. The main solution which will help to overcome most if not all of the problems that may be encountered by institutions is through developing *careful planning and organization*. For the Pacific island nations, additional assistance and resources are available and can be utilized through the regional organization and IMO (Appendix 2).

However, training institutions should not be bound to the use of current methods of training and assessment only, but should take every opportunity to develop new

teaching and training methodologies available so as to keep up with the modern development in technology in order to achieve the major objectives of the revised Convention of raising both the standards and quality of training and assessment of competency.

## **2. Recommendations**

In order to ensure that the amendments to the STCW 1978 Convention will be implemented effectively in Western Samoa, it is strongly recommended that the following actions be undertaken.

1. Develop an organizational structure that will ensure the proper implementation and management of the MET system.
2. Develop a dual purpose ratings training scheme that will both improve overall standards of training and level of safety knowledge onboard as well as preparing Western Samoan seafarers for new technology and onboard operational needs and challenges in the future.
3. Revise and update the training curriculum and assessment procedures to ensure that the new requirements for skill based competency are met.
4. Upgrade all teaching staff qualifications by the introduction of mandatory instructional techniques programs.
5. Develop a scheme to retain staff at the school and reduce 'brain drain'.
6. Upgrade all of the teaching facilities and equipment to ensure proper deliverance and assessment of course subjects.
7. Develop a quality standard system to be applied to all training and assessment activities and to meet the internal and external evaluation requirements of the amendments.
8. Develop the report to be communicated to IMO through the Administration of steps undertaken by MTC for the implementation and compliance with the

amendments in accordance with the procedures recommended by the MSC at its sixty-eighth session February 1997 (MSC 68/5/1, Agenda item 5).

The writer is confident that with correct planning and cooperation between the local authorities, the shipping industry and the training institution, the task of developing and presenting to IMO the steps to be undertaken and how to implement them by Western Samoa, will become a reality.

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**TABLE TO ASSIST IN THE CONSIDERATION OF  
MATERIALS COMMUNICATED IN ACCORDANCE WITH STCW,  
ARTICLE IV, REGULATION I/7 AND SECTION A-I/7 OF THE STCW CODE  
(COMPARISON TABLE)**

This table is intended to assist competent persons in determining that the information communicated to IMO by a Party to the STCW Convention is, first of all, **complete** and, secondly, **sufficient** to sustain a conclusion that it "confirms that full and complete effect is given to the provisions of the STCW Convention", in accordance with paragraph 2 of regulation I/7.

A determination of the completeness and sufficiency of the material being evaluated should be based on "a comparison of the facts reported in the information communicated to the Secretary-General of the Party with all the relevant requirements of the Convention", in accordance with paragraph 8.1, section A-I/7 of the STCW Code. If a particular requirement does not apply to the Party concerned, the "not applicable" box will be marked with N/A. Where, in the opinion of the competent person, the information provided is complete, the appropriate "cell" in the table should be marked with a check (✓). Where, in the opinion of the competent person, the evaluation confirms full and complete effect has been given to the relevant provision, the appropriate cell should be marked with a check. Cells marked with 0 (zero) indicate that the information is incomplete or that full and complete effect has not been

INFORMATION COMMUNICATED BY 1 AUGUST 1998 OR WITHIN ONE CALENDAR YEAR OF ENTRY INTO FORCE OF REGULATION I/7 FOR [NAME OF PARTY], WHICHEVER IS LATER AND EVALUATION

Reference	Information		Convention regulations to be met (includes STCW Code)	Evaluation	
	Not applicable	Complete		Implementation measures *	Monitoring and compliance measures **
<b>Article IV(I)(a)</b>					
Text of laws, decrees, orders, regulations and instruments			articles VI, VIII, IX chapters I to VIII Part A Code		
<b>Article IV(I)(b)</b>					
For each certificate full details of:	Contents and duration of study of courses		chapter I: 1/6, 1/8 chapters II to VII		
	National examination and other requirements				
<b>Article IV(I)(c)</b>					
Specimen certificates			article VI chapter I: 1.2		
<b>A-I/7 paragraph 2.1</b>					
Information on governmental organisation	Name		chapter I, regulation I/9		
	Postal address				
	Telephone numbers				
	Fax numbers				
	optional e-mail address				
	organisation chart				

\* includes: legal instruments adopted or enacted and administrative arrangements.

\*\* includes: procedures for overseeing and verifying compliance and corrective measures.

Reference	Information		Convention regulations to be met (includes STCW Code)	Evaluation	
	Not applicable	Complete		Implementation measures *	Monitoring and compliance measures **
<b>A-1/7 paragraph 2.2</b>					
Explanation of:	Legal measures		chapter I, regulations 1/3, 1/5, 1/6, 1/8, 1/9, 1/10, 1/11, 1/14, 1/15		
	Administrative measures		chapter VIII		
<b>A-1/7 paragraph 2.3</b>					
Statement of policies adopted concerning	Education		chapter I, regulation 1/6, 1/8, 1/9, 1/11, 1/12		
	Training		chapters II to VII		
	Examination				
	Competency assessment				
	Certification		chapter I, regulations 1/2, 1/5, 1/8, 1/9, 1/10, 1/11  chapters II to VII		

\* includes: legal instruments adopted or enacted and administrative arrangements.

\*\* includes: procedures for overseeing and verifying compliance and corrective measures.

Reference	Information		Convention regulations to be met (includes STCW Code)	Evaluation		
	Not applicable	Complete		Implementation measures *	Monitoring and compliance measures **	
<b>A-I/7 paragraph 2.4</b>						
for each certificate a summary of:	Courses		chapter I, regulations I/6, I/8, I/12			
	Training			chapters II to VII		
	Examination					
	Assessment					
<b>A-I/7 paragraph 2.5</b>						
concise outline of procedures and stated conditions to authorize, credit or prove:	Training		chapter I: I/6, I/8, I/9, I/11, I/12			
	Examination			chapters II to VII		
	Medical fitness					
	Competency assessments					
list of authorizations, delegations and approvals			regulation I/7			

includes: legal instruments adopted or enacted and administrative arrangements.  
includes: procedures for overseeing and verifying compliance and corrective measures.

Reference	Information		Convention regulations to be met (includes STCW Code)	Evaluation	
	Not applicable	Complete		Implementation measures *	Monitoring and compliance measures **
<b>A-1/7 paragraph 2.6</b>					
summary of the procedures allowed in granting any dispensation under Article VIII			chapter I: 1/5, 1/9		
<b>A-1/7 paragraph 2.7</b>					
the results of the comparisons carried out pursuant to regulation 11			chapter I: 1/11 chapters II to VII		
concise outline of refresher and upgrading training mandated					

**INFORMATION COMMUNICATED  
WITHIN SIX MONTHS OF UNDERTAKING THE MEASURES DESCRIBED  
BY [NAME OF PARTY] AND EVALUATION**

Reference	Information		Convention regulations to be met (includes STCW Code)	Evaluation	
	Not applicable	Complete		Implementation measures *	Monitoring and compliance measures **
<b>A-1/7 paragraph 3.1</b>					
Full description of any equivalent education or training arrangements pursuant to article IX		article IX chapters II to VIII			

\* includes: legal instruments adopted or enacted and administrative arrangements.

\*\* includes: procedures for overseeing and verifying compliance and corrective measures.

Reference	Information		Convention regulations to be met (includes STCW Code)	Evaluation	
	Not applicable	Complete		Implementation measures *	Monitoring and compliance measures **
<b>A-1/7, paragraph 3.2</b>					
A summary of measures taken to ensure compliance with regulation 1/10		chapter I: 1/9, 1/10			
<b>A-1/7, paragraph 3.3</b>					
A specimen copy of safe manning documents issued to ships employing seafarers holding alternative certificates under regulation VII/1			chapter I: 1/7		
<b>A-1/7, paragraph 4</b>					
Report of results of evaluations carried out pursuant to regulation 1/8 covering:  Terms of reference of evaluators  Qualifications and experience of evaluators  Date and scope of evaluation  Deficiencies found  Corrective measures recommended  Corrective measures carried out			chapter I: 1/8		

\* includes: legal instruments adopted or enacted and administrative arrangements.

\*\* includes: procedures for overseeing and verifying compliance and corrective measures.

General Evaluation: Is the material communicated sufficient to support a conclusion that the information "confirms that full and complete effect is given to the provisions of the Convention" in accordance with paragraph 2 of STCW regulation 1/7?

\_\_\_\_\_ Yes

\_\_\_\_\_ No

Comments:

(Signature of the Chairperson of  
the Panel of Competent Persons)

IMO workshop material on implementation of the revised STCW Convention  
IMO-972E

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*PART FOUR – Implementation of the new regime*

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**Implementation by maritime academies**

All requirements of the Convention that directly affect the activities of maritime academies take immediate effect on 1 February 1997 except that, until 1 February 2002:

- .1 candidates who, before 1 August 1998, commence an approved education and training programme or an approved training course or approved seagoing service for a certificate or series of certificates (e.g. deck or engineering) provided for under the existing Convention may be trained and certificated on the basis of the existing Convention provisions; and
- .2 approved courses provided for the purposes of revalidation of certificates may continue to be based on prior requirements.

Only the certificates provided for under the 1978 version of the Convention are affected by the transitional provisions. All other training and certification provisions take immediate effect. Thus, for example, alternative certificates issued under chapter VII can only be issued to candidates who meet all requirements of the revised Convention. While credit can be given for the training and competence evidenced by virtue of certificates issued under the previous provisions, compliance with any further training or competence now required, such as radar and ARPA simulator training and competence assessment, has to be demonstrated. The same applies to the new training required and the new documentary evidence that is to be issued under regulation V/2 and chapter VI.

Although most of the knowledge required for deck, engineering and radio certificates remains unchanged, the revised Convention requirements now focus on the competence necessary to perform the functions concerned. All existing courses and training material have therefore to be reviewed to ensure that training outcomes are linked to the competence specified under the Convention and require the correct and intelligent application of all associated knowledge, proficiency and skills. Even if alternative certification is not going to be introduced by the Party or Parties concerned in the near future, there is merit in taking the opportunity to redistribute course content so that courses are aligned with the functions identified in chapters II, III and IV and with the requirements of chapters V and VI. This is particularly true if a significant proportion of those trained at the academy are to serve in ships of other flags.

As in all international conventions or treaties, the standards prescribed by the STCW Convention are minimum standards. STCW standards of competence should form the core curricula of all maritime academies and constitute the basis for evaluating and approving training provisions for masters, officers, ratings and other personnel who are to serve on seagoing ships.

All education and training to be accredited under the Convention has to be approved by the Party which issues the certificate or qualification concerned. This includes education and training intended to prepare young persons for a career at sea, pre-sea training, new-entrant training, sandwich-type courses or training, upgrading courses, correspondence courses, distance learning courses, on-board training, etc. This does not imply that there will be no training provided that is not approved. Unapproved training courses will continue to exist, but no credit will be given them under the revised Convention.

Academies which provide maritime education and training on a regional basis have to have the education and training they provide approved by all Parties who are to use the regional facility to train their seagoing personnel. Regional arrangements may include the evaluation of competence and assessment of the fitness of candidates to have certificates issued to them. No specific provision has been made in the Convention for the issue of "regional certificates". However, the provisions of regulation I/2, paragraph 8 allow Administrations to use a format different from that given in section A-1/2 of the STCW Code, provided all required information is given. This allows greater flexibility than is at first apparent. A less apparent effect is that any regional or other group of Parties could establish appropriate co-operative arrangements to allow them to issue common certificates and endorsements. These documents would be issued under the authority of all the Parties involved. Holders of such certificates would be entitled to serve on board the ships of any of the co-operating Parties without the necessity of an endorsement attesting recognition.

Since the Convention requires masters and chief engineers and those certificated at the management level under chapter VII to know the Administration's (flag State's) legislation which gives effect to international provisions dealing with safety and pollution-prevention matters, arrangements have to be made to impart this knowledge. The subject matter may be taught during the "regional course" or other arrangements need to be made by each Administration concerned.

Except as explained above regarding co-operative arrangements, any regional "pooling" of masters, officers or radio operators has to take into account the need for each Administration to issue an endorsement attesting recognition of the certificate for use in ships entitled to fly its flag. Ratings and other personnel are not required to have their certificates endorsed for use in ships entitled to fly a flag other than the flag of the Party which issued the certificate.

### **Guidance available**

IMO has been requested to revise those model courses which are affected by the revision of the STCW Convention requirements. Such revision may take some time to accomplish, but, pending completion of their revision, most courses can still be of assistance in developing course content and learning outcomes.

### **Maintaining quality standards**

All training and assessment of seafarers required under the Convention is required to be administered, supervised and monitored, and trainers and assessors have to be appropriately qualified, in accordance with the requirements of regulation I/6 and section A-I/6. Quality standards have to be applied to all training and assessment activities in accordance with the provisions of regulation I/8 and section A-I/8. Provision has also to be made for external evaluation of the quality standards and the activities they cover to be carried out at intervals of not more than five years. National academic standards organizations or committees may have already developed quality standards that are well suited for application to maritime academy activities. The Administration has to be provided with the results of each evaluation so they may be incorporated into the information required to be communicated to the Secretary-General of IMO under the provisions of regulations I/8 and I/7.

### **Professionalism and the safety culture**

Every opportunity should be taken to strengthen the professionalism of all seafarers and to encourage the development of a strong safety culture on board ships of all types. Those ships carrying passengers or cargoes of a hazardous nature warrant special consideration. Short courses and seminars to enhance the knowledge and motivation of serving seafarers should be developed by maritime academies in consultation with the Administration and industry.