

The Implementation Situation of the '95 Amendments of STCW Convention in ROK and MET in KMU

*Lee Yun-Cheol**

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I. Introduction

The most important treaty dealing with officer and crew standards is the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers(STCW, 1978). 133 countries whose combined merchant fleets represent more than 95% of the world total have so far accepted the above Convention. However, it was often criticized for not setting high enough standards, and over the years it became out of date. In 1995, therefore, IMO adopted amendments which represent virtually a complete re-writing of the Convention. These amendments entered into force on 1 February 1997 and represent the beginning of a process that is expected to have a major impact on certification and training standards in the years to come.

One of the most important amendments stipulates the role of IMO itself in implementing standards. Parties to the Convention have to submit information to IMO concerning administrative measures taken to ensure compliance, education and training courses, certification procedures and other relevant matters. This information is now being reviewed and evaluated on a confidential basis by panels of competent persons, who will report on their findings to the IMO Secretary-General, who will in turn report to the MSC on the Parties which fully comply.

By the 1 August 1998 deadline, 82 countries including Republic of Korea, China, Japan, etc. out of the 133 STCW Parties as of now had communicated implementation information on compliance with the requirements of the revised Convention. Since that date, another 12 Parties had also communicated its information to Secretary General. The 82 Parties, which had met the deadline,

* LL.D. & Prof, Division of Maritime Transportation Science

represent well over 90% of the world's ships and seafarers, which indicated that the IMO membership had successfully met the first challenge on the road to improved competence of seafarers, a process which had started with the 1995 Conference.

In this paper, it is described that the general implementation situation of '95 STCW revised Convention in Republic of Korea and Korea Maritime University as a sole integrated university in maritime field of Korea in accordance with the Convention together with maritime education and training in KMU.

II. Matters regarding Communication of Information in the Text

1. Paragraph 1(a) of Article IV(Communication of Information) of the Convention

The provision of the Convention is "the text of laws, decrees, orders, regulations and instruments promulgated on the various matters".

And relevant Korean laws to be communicated in accordance with the provision of paragraph 1(a) of Article IV of 1995 amendments to the Convention are Ship Officers' Act, Seamen Act, Radio Act, Marine Accident Inquiry Act, Education Act, etc.

2. Paragraph 1(b) of Article IV(Communication of Information) of the Convention

The relevant content of the provision of the Convention is "full details, where appropriate, of contents and duration of study courses, together with their national examination and other requirements for each certificate issued in compliance with the Convention".

1) Outline of maritime education system in Korea

General education starts at the age of 7, and 9 years of schooling up to middle school is mandatory in Korea. Most of the graduates of middle school enter into a high school(3 years' course) and a good many continues his/her studies at junior college(2 years' course) or university(4 years' course).

In particular, there are under the Ministry of Education, 2 universities and 2 high schools in the maritime field and 5 universities and 9 high schools in the fisheries field. In addition, under the Ministry of Maritime Affairs and Fisheries, there is a consolidated education and training institute as a legal corporation, covering both in maritime and fisheries field.

The education and training for the both maritime and fisheries field systemized high school

course of 3 years and university course of 4 years to enter high school and university after completion of 9 years' and 12 years' general education respectively.

As for the training courses for officers in charge of navigational watch, minimum period of training programme for deck officers shall be 3 years including 1 year of on-board training which meets the requirements of Section A-II/1 of the Convention and is documented in an approved training record book. During the above on-board training, bridge watchkeeping duties must be performed under the supervision of the master or a qualified officer for a period of not less than 6 months(Reg. 16 of the Enforcement Decree of Ship Officer's Act).

On the other hand, minimum period of training programme for engineer officers shall be 3 years including the on-board training for a period of not less than 6 months which meets the requirements of Section A-II/1 of the Convention and is documented in an approved training record book(Reg. 16 of the Decree). And, minimum period of training programme for operating officers who hold alternative certificates shall be 3.5 years including 1 year of on-board training which meets the requirements of Section A-II/1 of the Convention and is documented in an approved training record book. During the above on-board training, bridge watchkeeping duties must be performed under the supervision of the master or a qualified officer for a period of not less than 6 months, and practical training in an engineering department under the supervision of a qualified engineer officer for a period of not less than 6 months(Reg. 16 of the Decree).

2) Certificate of competency

There are 6 classes of certificate for deck officer and engineer officer, 4 classes for radio officer, 4 classes for operating officer, and 1 class for small vessel operator in Korea(para. 2 of Article 4). Each deck officer certificate from 1st to 4th class is further divided into 2, i.e. the certificate for merchant vessel only and the same for fishing vessel only and each class of radio officer certificate is divided into the certificate for telegraphic officer and electronic officer. Every class of the operating officer certificate which aims to permit to serve on board an automated vessel provided by Article 2 of the Act may have majoring field of deck and engineering in accordance with the provision of Regulation 4-2 of the Decree. The 5th class and the 6th class deck officer certificate are permitted to serve both merchant and fishing vessel and may be issued with the limitation to serve on board specific vessel only or such vessel that sails only inland waters.

3) Examination

The examination, classified as the periodical and the temporary examination, is carried out by the Korea Institute of Maritime and Fisheries Technology(KIMFT) of which the management of

examining has been entrusted by the Government of Korea(Reg. 24 of the Decree).

The method of examination has been specified in the provisions of Regulation 12 of the Decree as followings.

The examinations for deck officer, engineer officer and operating officer certificates shall be divided into written and oral examinations. The oral examinations shall be conducted only for those having passed the written examinations or having been exempted from the written examinations, except in case where both written and oral examinations are conducted at the same time. The examinations for radio officer certificate shall be conducted both by the provisions of the Radio Act and the Ship Officer's Act. The former shall be written, and oral, and the latter an oral examination only. The examinations for small vessel operators shall be written examination, oral and practical test.

As for qualifying standards of examinations, every person marked average of 60 percent of the whole subjects and 40 percent for each subjects(but 60 percent for the subject of laws and regulations for deck officer and operating officer certificates) shall be the successful candidates. And,t the passing level of oral examination shall be at least 60 points on average when the maximum passing level is considered as 100 points for each examiner.

On the other hand, in case every person having passed written part but failed oral part of examinations for 2nd class deck officer, engineer officer or operating officer certificate or over applies again for examinations for the same species and the same class of certificate within 4 years from the date of passing the written part, he shall be exempted from the written examination.

If a candidate falling under the followings has at least 2 times as long as the seagoing service required by the provision of the table 1-3 of the Decree and has in addition completed the training course set out in the provision of the Ordinance of the Ministry/ he/she shall be exempted from written examinations for a class higher certificate;

- ① persons holding the third class deck officer certificate or under
- ② persons holding the third class engineer officer certificate or under
- ③ persons holding the third class operating officer certificate or under

If any candidate whose marks were under the passing standards but attained 60 percentage marks or more for 2 subjects or more among written examination subjects in the previous examination sits again for corresponding examinations within 2 years, he/she shall be exempted from the written examination for the subjects of 60 percentage marks or more.

For one of the following certificates, the candidate who has passed the written examinations shall be exempted from oral examinations.

- ① Examinations for 3rd class deck officer certificate or under ;
- ② Examinations for 3rd class engineer officer certificate or under ;
- ③ Examinations for 3rd class operating officer certificate or under

3. Paragraph 1(c) of Article IV(Communication of Information) of the Convention

The provision of the Convention is “a sufficient number of specimen certificates issued in compliance with the Convention”

The Ship-officer’s certificate and the endorsement are integrated in one in Korea. However, the existing format will be valid until February 1, 2002.

The form of certificate for ratings forming part of navigational or engine room watch is included in the seamen’s book in Korea. The form of certificate for medical care is included in the seamen’s book in Korea. The form of certificate for proficiency in survival craft is included in the seamen’s book in Korea. The form of certificate for ships carrying dangerous cargoes is included in the seamen’s book in Korea.

The KIMFT is authorized by the Government to issue the certificate of completion for other training courses such as basic marine safety courses, etc.

4. The Outline of the Measures taken under the Provision of Regulation 1/15(Transitional Provision)

- 1) Measures associated with Regulation 1/15(1)(To issue, recognize and endorse certificates)

The Republic of Korea established a policy that the 1995 amendment to the STCW Convention could be applied to Korean vessels and seafarers as early as possible. But in relation to demonstration of competency by a training record book, the previous provisions shall be applied to those who have been on board after getting official approval prior to August 1, 1998, until they get official approval to leave ships.

The related provision of the Korean national law is the Addenda of the Decree Regulation 2(Transitional Measures for Proof of Seagoing Service by Training Record Book) : “The previous provisions, regarding the candidates who commenced approved seagoing service and so officially approved before August 1, 1998 amongst candidates required to prove their seagoing service by training record books in conformity with the revised provisions in the latter part of sub-paragraph 1 of Regulation (1), shall be applied to until they get official recognition to leave ships.”

2) Measures associated with Regulation I/15(2)(To renew and revalidate certificates and endorsements)

Until January 31, 2002, the previous provisions shall be applied to those ship officers having commenced approved seagoing service at the time of entry into force of this Decree(Feb. 24, 1998).

For the person comes under one of the following cases at the time of entry into force of the Decree(Feb. 24, 1998), application of the sea service requirements for certification shall be graced by the time specified.

- ① Sea service requirement of the holder of 5th class to obtain 4th class certificate - until Jul. 31, 1998
- ② For calculating sea service period for the students and graduates of the Recognized Education and Training Institute - until Jul. 31, 1999
- ③ For persons having completed various simulator course - until Jul. 31, 1998

And the person who has been granted permission for relaxation of the manning standards, at the time of the entry into force of this Decree, by the previous regulation, he/she may enjoy relaxation until permitted date.

In case of Republic of Korea, no special transitional measures need to be taken in relation to re-issuance of certificates of competency or extension of the term of validity since not gross registered tonnage but gross tonnage has been used long before in the issuance of certificate of competency and the application of manning standards.

III. Matters regarding Communication of Information in the Annex(Code A)

1. Section A-I/7(Communication of Information). Paragraph 2.2

The provision of the Convention is "A concise explanation of the legal and administrative measures provided and taken to ensure compliance, particularly with regulations I/6 and I/9".

1) Measures on Section A-I/6(Training and Assessment)

The training and assessment are administrated, supervised and monitored in accordance with the provision of section A-I/6. And also, the training and assessment are structured in accordance with written programs including such methods and media of delivery, procedures, and course material as are necessary to achieve the prescribed standards of competence.

Those persons who are responsible for training and assessment of competency of seafarers, as

required under the Convention, are appropriately qualified in accordance with in the provisions of Section A-I/6 of the STCW Code for the type and level training or assessment involved. In particular, persons conducting in-service training or assessment on board ship shall only do so when such training or assessment will not adversely affect the normal operation of the ship and they can dedicate their time and attention to training or assessment. And any person conducting in-service training of a seafarer, either or ashore, which is intended to be used in qualifying for certification under the Convention, shall have an appreciation of the training programme and an understanding of the specific training objectives for the particular type of training being conducted, be qualified in the task for which training is being conducted, have received appropriate guidance in instructional techniques involving the use of simulators and gained practical operational experience on the particular type of simulator being used. At the same time, any person responsible for the supervision of in-service training of a seafarer intended to be used in qualifying for certification under the Convention shall have a full understanding of the training programme and the specific objectives for each type of training being conducted.

a) Measures on Training

Provisions on training(methods of study, media of delivery and course material) are specified in the provisions of regulation 16-2 of the Presidential Decree of Ship Officers' Act and Regulation 3 of the Standards for the Recognized Education and Training Institutes.

In-service training instructors and assessors shall conduct training and assessment only when such training and assessment will not adversely affect the normal operation of the ship and they can dedicate their time and attention to training or assessment.

Qualifications of instructors, supervisors and assessors are contained in the Provisions of 7 and 9 of the Standards of the Recognized Education and Training Institutes and Regulation 4 of the Standards of Records and Verification of Training Record Book.

2) Measures on Regulation 1/9(Requirements, Issue and Registration of Certificates, etc)

Every ship-officer to serve on-board shall hold an appropriate certificate of competency issued by the Minister of Maritime Affairs and Fisheries, depending on the classifications of Ship, his/her responsibility and duty on the ship(Article 4 of the Ship Officers' Act).

The Minister shall qualify any person who meets all the requirements of the sub-paragraphs below as a certified officer. Where, the Minister may require him/her to complete in advance approved education and training or on-board training subject to the relevant provisions of the Decree, in accordance with the species and classes of the certificates set out in the Decree(Article 5 of the Act).

- ① The candidate for certification must have passed the national ship officer's examination within 2 years.
- ② The candidate for certification must have completed approved seagoing service required for the classes of certificate.
- ③ The candidate for certification must meet the standards of medical fitness for duty in accordance with the relevant provisions of the Seamen's Act.
- ④ Persons not having completed training courses in a Recognized Education and Training Institute shall complete a certificate of competency acquisition course(Regulation 5(1) of the Decree).

The necessary matters such as the requirements to sit for the national ship-officers examination, the method of examination, the competence, the seagoing service, etc. in accordance with the provisions of sub-paragraphs 1 and 2 of preceding paragraph (1) shall be prescribed in the Presidential Decree.

When the candidate qualified in accordance with the provisions of sub-paragraph (1), the Minister shall issue the certificate of competency as set out in the provisions of the Ordinance of the MOMAF.

When the certificate is lost or becomes damaged, or of which entry needs to be amended, it may be reissued or amended by application as set out in the provisions of the Ordinance of the MOMAF.

person who falls under one of the following sub-paragraphs shall not be qualified as a certified officer;

- ① A person who is less than 18 years of age.
- ② A person whose certificate was cancelled and 2 years have not elapsed since then.

Calculation of period of seagoing service depends upon the provision of Regulation 7 of the Decree. Period of seagoing service shall be reckoned from the date of engagement to the date of discharge from a ship and the date of engagement shall be included.

Parties and companies may request the Seafarers and Labor Policy Division as to verification of the authenticity and validity of the certificates issued by Korean Government at any time.

Revalidation of Certificate of Competency is prescribed in the provisions of Articles 7 and 8 of Ship Officer's Act, Regulation 20 of the Decree and Section 18 of the Ordinance.

If any person desires to obtain a certificate or competency for radio officer, he/she shall hold an appropriate certificate in accordance with Radio Act. The provisions regarding permission and operation of ship radio stations and technical qualifications of radio personnel are prescribed in the provisions of Radio Act.

3) Other important Legal and Administrative Measures

Other legal and administrative measures for implementation of the revised STCW Convention are prescribed in the Ship Officers' Act, Seamen's Act, Radio Act, Marine Inquiry Act and their subsidiary Decrees and Ordinances.

The requirements for seagoing service for certification are prescribed in the provisions of the Decree.

As requirements for Certification of Qualifications, there are also maritime safety training such as basic safety training course, advanced fire fighting course, proficiency in survival craft courses and medical training courses, certification system of ratings forming part of navigational or engine room watch, tankers and ro-ro passenger ships such as qualification for tanker personnel and qualifications for ro-ro passenger ships.

4) Measures on Quality Standards(Regulation 1/8)

The quality standards was legislated in the Decree of the Ship Officer's Act for establishing quality evaluation system and quality management system.

The quality management system shall apply to the Recognized Education and Training Institutes, the Examinations and Assessment Body and the entities conducting the affairs regarding the issuance of certificates of competency and other certificates for seafarers(Article 16-2 of the Ship Officer's Act and Regulation 3 of the Quality Standards).

Quality management system, internal evaluation system(periodical evaluations to be conducted compulsorily every five years and unscheduled evaluations to be conducted when considers necessary to improve the quality concerned by themselves), external evaluation system(to be conducted compulsorily every five years), re-evaluations, management of nonconforming items, etc. have been introduced in the quality standards. The Operating Committee for Quality Evaluations composed of competent persons shall be organized to conduct the quality evaluations efficiently. And is also provided the requirements of evaluators' qualification.

The quality management systems of the Recognized Education and Training Institutes, the examination body and the entities conducting the affairs of certification for seafarers(totally 20) have been established in accordance with the quality standards.

2 universities, 2 high schools, the Examinations and Assessment Body and the entities conducting the affairs regarding the issuance of certificates of competency and other certificates for seafarers have already evaluated under the self-auspice and external evaluations are proceeding with the expectation of completion by the end of this year in the maritime field.

5 universities and 9 high schools are scheduled to be done above internal and external

evaluations within next year 2,000 in the fisheries field. After completion of external evaluations for all concerned bodies, The Korean Government will submit the final report to IMO.

2. Section A-1/7(Communication of Information), Paragraph 2.3

The provision of the Convention is "A clear statement of the education, training, examination, competency assessments and certification policies adopted".

1) Education and Training Policy

Policies on the maritime education and training in Korea could be classified into two folds. Policy of the Ministry of Education is to provide education system directed towards perfect persons, while policy in accordance with the Ship Officer's Act and the Seamen Act is to provide maritime education system ensuring the safe operation of vessels.

The practical on board training for certification is based on training ship system in the maritime universities, which is supplemented by in-service on board training that is conducted by entrusted shipowners or other educational institutes. The practical on board training is controlled strictly by the training records books.

The purpose of education in Korea is to have all the people complete their personalities under the humanitarian ideal and acquire independent capacity of living and qualification as citizens and serve for development towards a democratic nation and contribute to realization of public prosperity of human beings(Article 1 of the Education Act).

The maritime education and its policy in Korea are prescribed in the provisions of Article 1 of the Ship Officer's Act and Regulation 2(7) of the Decree and Section 3 of the Enforcement Ordinance, Article 106 of the Seamen Act and Regulation 43 of the Decree and Standards for the Recognized Education and Training Institutes, and in addition, each institute has established its own policy.

An adequate number of ship-officers required to operate Korean fleet shall be educated and trained timely at a minimum of the standards of competency under the STCW Convention. The re-education for improvement of quality of seafarers shall be conducted to promote safe and efficient operation of Korean fleet. All the Recognized Education and Training Institutes shall meet the Standards of the Recognized Education and Training Institutes and pass the Independent Evaluations conducted by the Minister.

2) Maritime Examination and Certification Policy

In principle, the examinations for the certificates of competency are operated and conducted at

a national level.

Policies concerning national maritime examinations and certification are prescribed in the provisions of Article 5 of the Ship Officer's Act and Regulation 24(3) of the Decree and Section 3 of the Ordinance, the Guide for Conduct of Affairs on the National Maritime Examinations and the Quality Standards. The conduct and management of the national maritime examinations is to be entrusted as a whole to the Korea Institute of Maritime and Fisheries Technology in second half of 1998 but the control of certificates of competency is to be directly administered by the Government.

By conducting the national maritime examinations objectively and strictly, competence of applicants shall be evaluated and assessed thoroughly. Certificates of competency and certificates for watchkeeping ratings etc. are issued only to persons who meet the requirements of certification of the Ship Officer's Act and the relevant provisions of the Seamen Act. By adopting the management system of certificates of competency utilizing computerized systems, illegal issues of the certificates or any use of expired certificates shall be prevented.

3. Section A-1/7 (Communication of Information), Paragraph 2.5

The provision of the Convention is "Outline of the procedures followed to authorize, accredit or approve training and examinations, medical fitness and competency assessment, the conditions attaching thereto, a list of the authorizations, accreditations and approvals granted".

1) Approval of Educations and Training

- a) Legislation of the Standards of the Recognized Education and Training Institute (hereinafter referred to "the RETI")

The Ministry of Maritime Affairs and Fisheries legislated the standards to approve the RETI after taking opinions through a public hearing, on the basis of the outputs of special study on comparison of the requirements of the Convention to national regulations.

b) Procedures to appoint the RETI

- i) Application for recognition

Any Institute who desires to be appointed as the RETI is required to equip all relevant facilities set out in the provision of "the Standards on the RETI" prescribed by the Minister and submit an application for the appointment (or amendment of the appointment), to the Minister together with the documents in which the following sub-paragraphs are entered.

- ① History / organization and management plan of the institute concerned
- ② Training facilities and equipments / status of training vessels / periods and plans of training
- ③ Personal records and qualification of teaching and administrative staff, teaching subjects and hours of teaching staff
- ④ Maximum number of each training course, qualifications for the admission, and teaching subjects and hours
- ⑤ Budget details of the institute concerned
- ⑥ The statutes of the institute and the certified document of corporate body(applicable to a corporate body only)

ii) Appointment of the RETI(Section 4 of the Ordinance)

The Minister upon receiving applications shall issue the letter of appointment(or amendment of appointment) of the RETI, when he/she considers it necessary to appoint as a RETI taking account of the supply and demand policy on seafarers, training facilities and courses of the institute concerned, etc.

iii) Application for Amending the Contents Appointed(Section 5 of the Ordinance)

The head of a recognized education and training institute, when he desires to apply for amending the contents appointed, is required to submit an application for the appointment of the recognized education and training institute(amendment of the appointment), together with the following documents.

- ① the letter of appointment
- ② the documents containing reasons of application

iv) Cancellation of Appointments(Section 6 of the Ordinance)

The Minister may cancel appointment in case where an appointed institute falls under one of the followings :

- ① Where the institute has violated the conditions of appointment
- ② Where the institute has not implemented the appropriate corrective actions requested and given by the Minister resulting from the independent evaluation regarding the quality standards in accordance with the provision of Regulation 16-2 of the Decree.
- ③ Where the Act, the Decree or the Ordinance is violated.

2) National Examination for Certificate of Competency

The Examination for certificate of competency in Korea belongs to a national qualification

system. The examination is carried by the government or special entities(KIMFT) to be entrusted to perform such activities. The governmental agencies or entities shall perform strictly and fairly their activities concerning examination in accordance with the Guidelines of Examination Affairs. For the effective control of the examination, quality standards system shall have been introduced in such agencies and entities. A part of the graduates from a predominant institute, pursuant to the results of the evaluation, may be benefited for exemption from the written examination.

The examinations shall be controlled, managed and carried out by following bodies in Korea. These are The Ministry of Maritime and Fisheries(MOMAF), The Regional Office of MOMAF and Korea Institute of Maritime and Fisheries Technology

3) Approval of the Facilities to Assess Medical Fitness

The requirements for assessing seafarers' medical fitness is provided in the Article 53 of the Seamen Act. Medical fitness shall be assessed by the qualified doctors in an approved hospital.

4) List of RETI

Every RETIs in Korea is a national or public institution.

There are 5 Officers' training institutes for merchant vessel such as Korea Maritime University, Mockpo Maritime University, Korea Institute of Maritime and Fisheries Technology, Pusan Maritime High School and Incheon Maritime High School.

And, there are 13 Officers' training institute for fishing vessel such as Bukyeong University, Jeju University, Kyeongsang University, Yeosoo University, Kun-san University, Incheon Maritime Technical High School, Pohang Fisheries High School, Geoje Fisheries High School, Namhae Fisheries High School, Wando Fisheries High School, Daecheon Fisheries High School, Seongsan Fisheries High School and Kuryongpo General High School.

IV. Maritime Education and Training in KMU and its implementation of the STCW Convention

1. Educational and Training Goal

1) Educational Goal

Korea Maritime University aims at training and cultivating people of excellence who have a high-minded personality together with sound ideals. In so doing, the University is devoted to teaching and research of theories and a very wide range of their application in the various fields

to which substantial contributions will have been made for the development of communities and peoples based on the spirit of education in Korea.

2) Educational Goals of the Ship's Officer Developing Courses

It is the specialized nature of the Division of Maritime Transportation Science to provide the students with a sound undergraduate and graduate academic background to prepare for successful careers in the maritime industry, afloat and ashore.

The Division of Marine System Engineering provides education on a wide variety of subjects necessary for the economical operation and maintenance of modern automated marine engines and machineries. It also provides the students with a well programmed shipboard training opportunity.

The Division of Ship Operating System Engineering aims at cultivating ship's officers who are in charge of operation and management of modern automated ships and experts in maritime industries and related fields.

The Department of Maritime Police Science aims at offering theoretical and practical education necessary to develop merchant marine officers and maritime policemen. The courses include navigational and engineering subjects and also maritime laws necessary for the officials in maritime police.

3) Major courses of each division and department

To reach the aim, the Division of Maritime Transportation Science offers 2 major courses, which are the Maritime Management Science Course and the Maritime Information Engineering Course to develop successful shipboard officers and leaders in the maritime industry. Moreover, the division also provides a well programmed regimental training system to furnish students with outstanding leadership and a cooperative personality which are indispensable as successful professionals in the maritime field.

To reach the aim, the Division of Marine System Engineering offers 4 major courses, which are Marine Engineering Course, Ship's Machineries Engineering Course, Ship's Electronic Machineries Course and Ship's Refrigerating System Course.

The courses of Division of Ship Operating System Engineering consist of 2 major courses, the basic educational course and the exclusive course. The basic educational course is composed of natural science, basic subjects of engineering and special subjects for preparing the certificating of mariners as navigational or engineering officers. The exclusive course is composed of more specialized subjects which the division offers for concentration and study the in-depth subjects to prepare themselves for the prepared maritime experts.

There are 2 major specialized courses in the Department of Maritime Police Science, the navigational course(30 students) and engineering course(10 students). Students can select the course according to their decision at the end of the first term of first year. The navigational course is prepared for the students who want to get the deck officer license, and the engineering course is prepared for the students who want to get the engineer officer license.

4) The Standard of Education for Mariners

The basic standards for Division of Maritime Transportation Science are mandatory minimum requirements for certification of officers in charge of a navigational watch on ships of 500 gross tonnage or more, and mandatory minimum requirements for certification of GMDSS radio personnel(STCW Convention Regulation II/1 and Regulation IV/2). The division also provides more higher level of education for certification of masters and chief mates(Regulation II/2) additionally.

The basic standards for Division of Marine System Engineering are mandatory minimum requirements for certification of officers in charge of an engineering in a manned engine room or designated duty engineers in a periodically unmanned engine room(STCW Convention Regulation III/1). This division also provides much higher level of education for certification of chief engineer officers and second engineer officers of ships powered by main propulsion machinery of 3,000 KW propulsion power or more(STCW Convention Regulation III/2) additionally.

Division of Ship Operating System Engineering provides basic courses for preparing to get the alternative certificates and mandatory minimum requirements for certification of GMDSS radio personnel(STCW Convention Regulation VII/1 and Regulation IV/2).

The basic standards for Department of Maritime Police are mandatory minimum requirements for certification of officers in charge of a navigational watch on ships of 500 gross tonnage or more, and mandatory minimum requirements for certification of GMDSS radio personnel(STCW Convention Regulation II/1 and Regulation IV/2). This division also provides more higher level of education for certification of masters and chief mates(STCW Convention Regulation II/2) additionally. On the other hand, as far as engineering course is concerned, Mandatory minimum requirements for certification of officers in charge of an engineering in a manned engine room or designated duty engineers in a periodically unmanned engine room(STCW Convention Regulation III/1). The division also provides more higher level of education for certification of chief engineer officers and second engineer officers of ships powered by main propulsion machinery of 3,000 KW propulsion power or more(STCW Convention Regulation III/2) additionally.

2. Educational Course and Period

Educational period for each division and department is 4 years and educational contents of each

division and department are determined on the basis of educational contents of the 1995 Amendments to STCW Convention.

3. Training on board Training Ships

Training Ships are designed and constructed to train students in maneuvering ships, operating and maintaining engines, and handling of various instruments. The purpose of training is to accustom trainees to the sea life and to put their classroom studies into practice. Training ships are possessed of all modern navigational equipments to educate apprentice officers to have ship's operating knowledge as deck officers, engineer officers, chief engineers and masters.

Trainees as third year students of each division and department are divided into 4 groups. 3 groups are training sea-going duties on bridge and the other 1 group performs day work duty.

4. Educational Philosophy of KMU in relation to Implementation of the STCW Convention.

The competence that the future seafarers should have will be much higher than that working on board the present ship. Those future seafarers should have the capabilities to countermeasure more complex situations. In particular, they should have the intensive knowledge on marine engineering and navigation basically, and then the capabilities on both information treatment and decision making. And also they should have capabilities to countermeasure any emergencies for they will encounter in even more rapidly changing working environment. And also, it is very important for seafarers to have high level professional ethics, responsibilities, strong motivation, leadership and management.

On the basis of above trend of the times, KMU is focusing on training high level specialized personnel with future type of seafarers competence and large amount of modern high level managerial personnel for the shipping industry through specialized and intensive maritime education to meet the requirements of the 1995 Amendments of STCW Convention. Therefore, Students will take much more sensible construction of knowledge by way of various educating and training environment. Ultimately, KMU is striving to provide more plural and comprehensive maritime education for the future qualified personnels and new techniques according to the fundamental philosophy of the revised Convention.

5. Reformation of KMU to achieve high quality standards of MET

With the adoption of the 1995 Amendments to STCW Convention which is extremely influential to the every maritime institutions of the world, KMU has particularly made an unprecedented

and substantial improvement of the existing maritime education and training(MET) to meet the IMO requirements. It goes without saying that KMU has been influenced by not only STCW Convention, but also demands from the maritime industry. The maritime infrastructure in Republic of Korea needs more than trained ship officers. And also it needs specialized personnel with a traditional basis together with additional training such as above mentioned fields according to the needs of the maritime industry.

KMU is now applies two principles to the maritime education and training for students. The first principle is that overall pattern of maritime education and training in KMU must be carefully balanced among academic education, professional training ashore and practical experience at sea. The second principle is that maritime education and training for students must be related to their next job after leave thier sea-service.

In particular, as far as the Maritime College of KMU is concerned, it is making a structural reformation which will be applied from the year of 2,000 in consideration of the new STCW Convention and maritime industry of Korea as shown under mentioned Table. This reformation, in particular, features that existing ship operation system engineering division is abolished and newly established ship operation system engineering division is a nautical-oriented division like maritime transportation science division.

Table <Structural Reformation Plan for Maritime College>

1999(at present)			2000(Future)		
Division (or Department)	students	Major programme	Division (or Department)	students	Major programme
Maritime Transportation Science	80	○Maritime Management Science ○Maritime Information Engineering	Maritime Transportation Science	80	○Maritime Management Science ○Maritime Policy Management ○Maritime Risk Management
Marine Engineering	120	○Marine Engineering ○Marine Mechanical Engineering ○Marine Mechatronics Engineering ○Marine Refrigeration Engineering	Marine Engineering	130	○Marine Engineering ○Marine Mechanical Engineering ○Marine Equipment Engineering ○Marine Refrigeration Engineering
Ship Operation Systems Engineering(old)	160		Ship Operation Systems Engineering(new)	80	○Ship Operation Management ○Maritime Information Engineering ○Maritime Safety & Environment
		(new)	Marine Mechatronics Engineering	70	○Systems Control ○Electric & Electronics
Maritime Police Science	40	○Maritime Police Science	Maritime Police Science	40	○Maritime Police Science
Total	400			400	

V. Conclusion

The qualities for seafarers servicing on board vessels have a great impact on the prevention of marine casualties and the whole performance of vessels themselves directly. Sub-standard vessels are not always carrying sub-standard seafarers, but vessels carrying sub-standard seafarers always bring about sub-standard vessels. This means that the management of human factor is one of the most important elements for the prevention of marine casualties and marine pollution.

In conclusion, the manning of well-educated seafarers can decrease human errors, operate vessels much more safely and protect the marine environment ultimately. At present, Republic of Korea and Korea Maritime University are striving to achieve the above mentioned goal, "maritime safety and protection of marine environment", on the basis of the implementation information of the 1995 Amendments to STCW Convention communicated to IMO.

In particular, KMU is recently promoting its organization and big reform of the system to cope with incessant rapid change of educational environment and maritime industry. But KMU is being faced with the problem of becoming object of combination and reorganization, incorporation, privatization without financial support from National Government. Because this is utmost and urgent important matter surrounding us, it must be seriously discussed and solved intercollegiately like between KMU and MMU, internationally like between Korea, China, Japan, and other relevant countries.

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Yun-Cheol, Lee : Prof. Lee was born in 1962. He received Doctor's Degree of Law(LL.D.) for International Law from Kyung-buk National University in 1997. He has a Second Class Deck Officer License and 11 years of Sea-service experience as Merchant ship deck officer and Training ship officer and instructor. His research interests are International Public Law, Maritime Law and Environmental Law. Now, he is a professor of Maritime College in KMU and Competent Person nominated by Secretary General of IMO for evaluating implementation information of 1995 Amendments to STCW Convention. He ia a member of The Korean Association of International Law(KAIL), The Korean Institute of Maritime Law(KIML), The Korean Institute of Navigation(KIN).

