Developing a new BScMSA program for future maritime safety officers at the Philippine Merchant Marine Academy

Benjamin Lorenzo dela Cuesta

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DEVELOPING A NEW BScMSA PROGRAM FOR FUTURE MARITIME SAFETY OFFICERS AT THE PHILIPPINE MERCHANT MARINE ACADEMY

By:

BENJAMIN LORENZO dela CUESTA
Republic of the Philippines
(Republika ng Pilipinas)

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

MASTER OF SCIENCE

in

MARITIME EDUCATION AND TRAINING
(ENGINEERING)

1998
I certify that all the materials 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.

______________

Supervised by:
Name: A. Professor Takeshi Nakazawa
Office: World Maritime University

Assessor:
Name: LCDR Stephen J. Ohnstad
Office: United States Coast Guard

Co-Assessor:
Name: Lect. Rajendra Prasad
Office: World Maritime University
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To the author's beloved father and mother whom he owes his existence that without them he is nothing in this world and to his brother and sisters that always keeping in track of his success.

To the author's loving spouse and his two little angels, Alona Fe and Jeremi Glen that serve as his inspiration to finish his studies and finally to the only God Almighty.
Title of Dissertation: DEVELOPING A NEW BScMSA PROGRAM FOR THE FUTURE MARITIME SAFETY OFFICERS AT THE PHILIPPINE MERCHANT MARINE ACADEMY

Degree: MSc

In respect to the mission and functions of the maritime safety administration of the Philippines, the dissertation is meant to identify what are the possible causes of the improper enforcement of maritime safety rules and regulations in the country. Likewise, it is intended to develop a solution to the weaknesses of the maritime safety personnel by proposing to develop a new course.

The proposed means of supply for the future maritime safety officers is examined in this dissertation identifying the State Maritime Academy of the Philippines as the meansource in the future. The two internationally recognized training institutions in the maritime safety were discussed and evaluated by the author. Analyzing the education and training method used by the two institutions if applicable in the Maritime Education and Training system of the Philippines.

Finally, the numbers of possible steps in developing a new program were described by the author and a number of recommendations as the future steps for establishing a new Maritime Safety Academy.

KEYWORDS: Education, Safety, Professionalism, Training, Qualification.
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<td>AFP</td>
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<td>BCGT</td>
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<td>BSC</td>
<td>Basic Seamanship Course</td>
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<td>BScMarE</td>
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<td>CAD</td>
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ENM - Escuela Nautica de Manila
EO - Executive Order
IMO - International Maritime Organization
IMO-MC - International Maritime Organization-Model Course
ISS-IMOC - International Safety Standards-International Maritime Organization Convention
JMSA - Japanese Maritime Safety Academy
MARAD - Maritime Administration
MAREPS - Marine Environmental Protection
MARINA - Maritime Industry Authority
MARLEN - Marine Law Enforcement
MAROPS - Marine Operations
MARSAR - Marine Search and Rescue
MET - Maritime Education and Training
MS - Military Science
MSS - Marine Safety School
MTC - Maritime Training Council
NCEE - National College Entrance Examination
NEASC - New England Association of Schools and Colleges
NOQC - Naval Officer's Qualification Course
PCG - Philippine Coast Guard
PD - Presidential Decree
PMA - Philippine Military Academy
PMMA - Philippine Merchant Marine Academy
PN - Philippine Navy
PNS  -  Philippine Nautical School
PSC  -  Port State Control
RA   -  Republic Act
RCSI -  Revenue Cutter School of Instruction
ROTC -  Reserve Officer’s Training Corps
SIRM -  School of Instruction for Revenue Cutters
STCW - Standards of Training, Certification and Watchkeeping
STLab - Shipboard Training Laboratory
TMAU-APR - Tokyo Memorandum of Agreement and Understanding-Asia Pacific Region
UNDP - United Nations Development Program
USA  -  United States of America
USCG - United States Coast Guard
USCGA - United States Coast Guard Academy
USMMA - United States Merchant Marine Academy
VSE  -  Vessel Safety Evaluation
VSR  -  Vessel Safety Regulation
Chapter I

Introduction

1.1 Background of the Study

The Philippines as an archipelagic nation, water transportation is an important means of transporting different classes of products from various parts of the country. It contributed a big share that plays a vital role in the economical growth of the country.

The sudden increased numbers of cargo vessel, passenger ships and the increasing numbers of fast crafts becomes obvious in the sea transportation. There are more than 21,618 vessels of different sizes (Valentino Ferre, WMU Dissertation) operating within the whole archipelago. About 45-50% of these vessels were made of wooden hull and some of which were already old in the service. Due to that, the Philippine Coast Guard (PCG) as claimed to be the maritime safety administration of the Philippines has a big role to promote the highest degree of maritime safety.

Meanwhile, over the past decades there were criticism about the poor performance of executing the duties of the maritime safety organization. This was observed when a big disaster took place in 1987. The accident was the collision between a tanker vessel loaded with flammable raw material that collided with a passenger vessel M/V Dona Paz. There were about 4,000 passengers involved from this case as based from
the statement of Joel Garcia in his dissertation (WMU Dissertation). On the other hand, as described by Valentino Ferre from his dissertation, public criticism were pointing their fingers on the capability of the PCG organization in enforcing public safety awareness in particular to the maritime aspects. He described that about 20,700 lives were involved from the different disasters way back from the early 1982 until the year 1990. In this particular condition, nobody is to be blame because the PCG organization had imposed a lot of strict maritime rules and regulations, safety measures, and assigning coast guard personnel to enforce these measures. But due to the qualification of these personnel engage in the maritime safety of the public lacking technical knowledge resulted to these accidents.

Giving emphasis on the above cases with respect to quality education, organization organizing programs for maritime training and education is also one of the factors that contributed to the poor quality of training among PCG personnel. In relative to this, the Commission on Higher Education which is the overall governing body for education has a big participating role for the future training of the PCG personnel.

1.2 Purpose of the Study

The challenge of the new Standards of Training Certification and Watchkeeping (STCW) 1995 Convention triggered the whole maritime community to upgrade their maritime training standards and meet at least the minimum requirements to include in the International Maritime Organization (IMO) whitelist. Last First of August (1998) the requirement for the new STCW convention was submitted by the Philippine government to qualify in the newly enforced global maritime training standards.

Meanwhile before the end of the submission date as mentioned earlier, the country established a massive review on the existing maritime education and training. The government formed a special body to conduct survey and to examine the different
maritime training institutions all over the country. This specialized body were composed of different governmental agencies which represents the maritime sector. The task assigned to this group is to conduct a nation wide evaluation on the existing maritime education and training system.

The purpose of which is to eliminate the maritime training institutions with a low standard of education and training system. About 112 maritime institutions were examined by the national government and unluckily only eight out of the total number were able to pass the new standards including the Philippine Merchant Marine Academy (PMMA). The big number of this privately owned maritime training schools were not able to qualify in the new standards.

Meanwhile from the new training standards, the Philippine government made its changes for the whole seafaring program. Considering the above problems of the maritime safety administration, it was not seen by the national government that PCG organization is employing unqualified personnel. Thereby, this dissertation is intended to analyze the following factors namely:

- identifying the major sources of the corps of officers at the PCG,
- evaluating the qualification and identifying the educational and training inadequacies of the present crop of officers in the PCG,
- investigate and identify the weaknesses of the PCG’s Corps of Officers in their role to the Philippine Maritime Administration,
- developing a specialized maritime safety course for PCG incoming sets of officers, and
- proposing that the state owned maritime academy, the PMMA, should take the responsibility of educating and training cadets for the PCG.
1.3 Scope of the Study

Briefly, the study is confined focusing the two organizations, the PCG who is the maritime safety administration that concerns in the promotion of a safe marine environment. Also, the scope of the study covers the processes of the maritime safety sector on how these functions being carried out. Whilst the state maritime institution of the country as included in this study describes the possible help for the present maritime safety administration.

In order to develop a better solution to the problem, the gathered information, research materials, interviews, unlimited amount data could help the author to achieve the main objectives of this study. Likewise, very useful WMU library materials with rich and valued information could support the author in bringing this study into more progressive. Short lectures and presentations from visiting professors could likewise very supportive in achieving the objectives of this study.

1.4 Relevance of the Study

The general description mentioned earlier in this Chapter needs some importance attention by the Philippine MET system and concerned government agencies and bureaus. Due to the continues growth of the maritime industry in the Philippines, the MET program prioritized the education and training of the seabased personnel. On the other hand, the attention for the shorebased industry in particular to the personnel at the maritime safety sector seems to be neglected. Now, it is the right moment for the national government to look into the necessary change to focus on the main issue relating to the shorebased training specifically to the maritime safety sector's personnel.
The applicability of this study could be use in the future references of introducing a new program for maritime safety administration.

1.5 Nature and Order of Presentation

Over the past decades, the PCG had played a vital role in promoting maritime safety claiming that their functions were all executed efficiently. But there are a lot of questions from the public why there are inevitable lost of lives at sea. By turning around the other side of the coin reveals the insufficient maritime safety officers and personnel holding specific functions and conducting technical survey and inspections aboard vessels.

As the author goes along with the study case, Chapter Two shows the overview of the PCG organization and the effects of the Philippine Navy to the specialization and professionalization programs of PCG. Meanwhile, the state maritime institution (PMMA) as included by the author in the main sequence of the study is sets as the best possible solution to be use in training and educating future maritime safety officers and personnel. In Chapter III, the general description of the PMMA educational system describes how the academy conducts its unique style of Maritime Education and Training (MET). Whilst the recognized institutions in two developed countries like the United States of America and Japan had carefully studied also in Chapter IV analyzing their applicability to the Philippine MET system.

Finally, the author was able to come up with the possible solutions in the described problems of the maritime safety sector as discussed in Chapter II. The later part of the study goes beyond some important factors that would help in the development of the plan to solve the described problems of the maritime safety administration.
Chapter II

"Analysis of the problem and formulation of solutions"

The Author

The Philippine Coast Guard: An Overview

It was in 1901 when the Coast Guard was first organized under Philippine Commission Act Number 266. During that period, the Coast Guard was named the Bureau of Coast Guard and Transportation (BCGT) supervised by the Department of Commerce to administer the shipping operations and promote safety of life at sea. Eventually, it was renamed the Bureau of Navigation pursuant to Philippine Commission Act No. 147. In 1945 it was abolished due to some financial constraints and its functions were divided between the Bureau of Public Works and the Bureau of Customs.

The changing world of maritime trade in the country served as an eye opener to re-establish the relapsed Coast Guard. Republic (RA) Act 5173 was then enacted in 1967 that re-established the Coast Guard to enable the Coast Guard to achieve its mission and functions and was directly attached as one of the major units of the Philippine Navy (PN). Moreover, PCG became the maritime safety administration of the country that was tasked to administer the country's maritime matters. And since it was attached to the PN, all the resources needed for its operation to perform its goals and objective was provided by the Philippine Navy.
2.1 The Mission and Functions of the Philippine Coast Guard

Republic Act 5173 mandated the PCG to enforce and assist in the enforcement of all applicable laws in waters subject to the jurisdiction of the Republic of the Philippines and to promulgate and administer of life and property at sea. It was also tasked to assist in the development and maintenance of operational requirements for national defense, aid to navigation, and rescue works. Summing up, the mission of the PCG was sub-divided into five primary functions, namely:

- Maritime Administration (MARAD),
- Maritime Operations (MAROPS),
- Marine Environmental Protection (MAREP),
- Maritime Search and Rescue (MARSAR), and
- Maritime Law Enforcement (MARLEN). See Figure 1.

![Diagram showing the functions of the Philippine Coast Guard](image)

**Figure 1. Functions of the Philippine Coast Guard**
2.1.1 Maritime Administration (MARAD)

PCG has four regulatory units under the Maritime Administration, namely; the Vessel Safety, Port State Control, Merchant Marine Administration, and the Navigational Safety to achieve its missions. In Maritime Administration the PCG formulates and regulates policies, rules and regulations to any specific task covered under its four regulatory bodies.

a. Vessel Safety

Under the Vessel Safety unit, developing and formulating vessel safety rules and regulations are being carried out. A new program under this body was developed by PCG known as the Vessel Safety Evaluation (VSE). The purpose of this program is to ensure that the seaworthiness of the vessel comply with the prescribed Vessel Safety Regulation (VSE) exercising all the ideas of safety of passengers during boarding operation. Additionally, the unit evaluates the competencies of the crew as well as the officers of any vessels that operates within the jurisdiction of the Philippines.

b. Port State Control

The Port State Control (PSC) ensures the inspection and survey of foreign vessels wherein the following criteria on the condition of equipment in fire fighting, communication, navigational equipment and oil prevention equipment, checking machinery conditions, manning requirements and ship’s documentation (if the tonnage measurements are certified) are checked, and the ship’s stability certificate is ensured to complying on the set rules and regulations to be certified. Additionally, it maintains the implementation of the International Safety Standards-International Maritime Organization Convention (ISS-IMOC), and the proper enforcement of the
Tokyo Memorandum of Agreement and Understanding within the Asia-Pacific Region (TMAU-APR). PSC likewise is promoting the safety of life and property at sea.

c. Merchant Marine Administration

To keep the nation’s highest standard for marine profession and ensure proper training of officers and crew serving on domestic and foreign vessels, the PCG conduct the following under its Merchant Marine Administration by:

- Enforcing disciplinary regulations on merchant marine vessels.
- Supervising the operations of any maritime institutions.
- Conducting assessment to marine personnel regarding professional competence.

d. Navigational Safety

To carry out marine investigation of sea disasters and accidents, the Navigational Safety unit performs this particular duty. On the other hand, PCG regulate regattas, monitor the construction of public and private ports, and supervise any salvage operations. Additionally, it formulates plans and constructs navigational aids to help mariners travel safely.

2.1.2 Maritime Operations (MAROPS)

Being a part of the PN, PCG renders security operations. It shall exercise control of shipping activities, maritime communications and vital port activities in times of national emergency. It also ensures security against various threat groups and assists to support the campaign for counter insurgency plans.
On the other hand, it conducts civil military operations to promote friendship among PCG personnel and civilians. Apart from these, it also conducts limited sea lift operations in support of the Philippine Navy mission.

2.1.3 Marine Environmental Protection (MAREP)

The primary duties and responsibilities of the Marine Environmental Protection are to formulate regulations that pertain to the prevention, control and monitoring of oil pollution from ships. It enhances its capability to respond immediately to any emergencies such as oil spill incidents and rescue operations.

On the other hand, it formulates regulations regarding illegal fishing activities and enforces laws for the conservation and protection of the marine environment and its resources.

2.1.4 Maritime Law Enforcement (MARLEN)

To create a continuous working relationship with other governmental agencies in controlling illegal activities such as i.e. piracy, smuggling, narcotics and gun running, MARLEN provides assistance to other government instrumentalities in the exercise of their functions. In the conduct of such activities, the PCG is deemed as deputized agency of the other agencies.

2.1.5 Maritime Search and Rescue (MARSAR)

The Maritime Search and Rescue are responsible to any maritime disasters and automatically conduct search and rescue operations. MARSAR under takes the following for an effective performance to respond in search and rescue operations.
- Acquire information on possible distress incidents and disseminate these signals to all its units that are capable of giving assistance.
- Check and guard all distress frequencies.

2.2 Effects of Executive Order 125 as Amended by 125-A to PCG’s Mission and Functions

The issuance of Executive Order 125 as amended by Executive Order (EO) 125-A decreased the functions of the Philippine Coast Guard. As provided for in EO 125-A, the following safety regulatory functions were transferred from the PCG to MARINA:

- developing and formulating plans, policies, programs, projects, standards, specifications and guidelines geared towards development of the country’s maritime industry,
- establishing, prescribing and regulating routes, zones and areas for operation on any public water services (franchising),
- issuance of licenses and certificates to officers, pilots, major and minor patrons and seamen as well as suspending and revoking these certificates and licenses,
- Enforcing rules and regulations that governs with the performance of shipowners and officers after accidents, and
- The specific functions written under EO 125 and 125-A as signed by the former Revolutionary President Corazon C. Aquino, will be the primary functions of the Maritime Industry Authority (MARINA) which is, at the present considered the maritime administration of the country.

The PCG was left with its main functions of promoting safety of life and property at sea, search and rescue, and marine pollution prevention and control.
2.3. The Composition of the Present PCG Personnel

As discussed earlier that the PCG is one of the major components of the Philippine Navy (see Figure II), the former is composed of approximately 3,750 naval officers and enlisted personnel. From the total size of the PCG organization, there are about 230 officers headed by a Commandant. The Commandant formulate, establish, provide direction, and control to the whole organization as aided by his Technical Staff and members.

![Diagram of organizational structure](Image)

Figure II. Organizational Placement of PCG
Source: Maximo Quibranza Mejia Jr., WMU Dissertation

2.3.1. Differences in the Educational Discipline Among PCG Personnel

There are three main sources of PCG officers, but before these officers work with the PCG, they started first at the Philippine Navy (PN). Normally, officers of the Philippine Navy are composed of graduates from the Philippine Military Academy
(PMA), Philippine Merchant Marine Academy (PMMA) and other Universities and Colleges. As illustrated from Figure II that the PCG is under the umbrella of the Philippine Navy (PN), assigning PCG Officers to different units are controlled by the PN. The illustration under Figure III shows the normal flow and the sources of PCG Officers. Most of these officers comes from various Universities and Colleges. For graduates of different universities and colleges before they start with the Naval command, at first they should be commissioned to qualify for the Call-to-Active-Duty (CAD). On the other hand, graduates of the state maritime academy (PMMA) are automatically commissioned as Naval Officers should they apply for CAD.

![Diagram](image)

Figure III. **The Flow of Philippine Coast Guard Officers**
PMA graduates with Military Science (MS) expertise are directly employed as Regular Officers within the three branches of the Armed Forces of the Philippines (AFP) wherein the PN is one.

2.3.2 Relevance of the NOQC Program in the Maritime Safety Administration

Initially, PCG officers were trained as naval personnel through the Naval Officers Qualification Course (NOQC) which is a mandatory requirement for new officers joining the Philippine Navy. The NOQC is a specialized course for naval training and military tactics. The course allows new officers in acquiring necessary knowledge, skills and attitudes in performing an effective management over the units of the navy. Likewise, it helps them to achieve an advancing military career. NOQC program is classified in three classes: the Class Alpha; Class Bravo; and the Class Charlie.

Class Alpha program is designed for officers who graduated from the premier military academy. The program allows PMA officers to know about the standard Program of Instruction (POI) that provides necessary knowledge, skills and attitudes of a naval officer needed for a progressive military operation.

The Class Bravo and Class Charlie programs provides the basic training and impart the general knowledge to selected Called-to-Active Duty Officers joining the Philippine Navy to qualify as Naval Officers. The purpose of this program is to train selected officers who graduated from various colleges and universities and who finished the Advance ROTC program as the basic military training course. Additionally, the requirement in completing any Baccalaureate courses is likewise necessary to be qualified as Naval Officer.
Such military training bears no significance if considering the main functions of the PCG, unless if the PCG’s function is about military operations and defense. In this case NOQC’s basic educational foundation is not applicable to PCG personnel and it is not specifically designed for maritime safety. Eventhough that the basic instructions in seamanship and navigation is included in the NOQC program, the coverage is very limited. Consequently, maritime safety could not benefit from the NOQC program wherein PCG personnel were trained.

2.3.3 PCG Officer’s Qualification Standards as a Maritime Safety Officer

Selection process and giving assurance by introducing quality standards is very important in the organization. The PCG has no standard system in selecting its personnel based on qualifications. The PCG qualification standard for its personnel lies in the hands of the PN. In this condition, the selection of each officer applying for assignment to the PCG depends on the discretion of the PN. Now, how does the PN set its standards in selecting officers? As enumerated below, these are the guidelines of the PN in selecting its officers which may be later on assigned in the PCG as safety officers:

- male or female
- must be a Filipino Citizen
- at least 5’4’’ in height
- has finished a four year course of any educational discipline
- At least finished the Advance Reserve Officers Training Corps (ROTC)
- Commissioned as Reserve Officer in the Naval Reserve Force
- must undergo and pass physical and medical examination including Pneuropsychiatric examination, and
- Pass other requirements for applying as commissioned officer.
On the other hand, enlisted personnel (or the technical people in maritime safety) serving the PCG are likewise assigned by the PN. Each enlisted personnel’s selection standard depends also on the PN’s preferences. The standard guidelines of the PN in selecting enlisted personnel are as follows:

- male or female
- at least 5'4'' in height
- a Filipino Citizen
- has no pending administrative case or criminal case
- Must have completed the secondary level of education (High School Graduate) or higher, and
- Must undergo and pass the medical and physical examination conducted by the Philippine Navy.

Clearly, the above guidelines of selecting personnel to be assigned in the country’s maritime safety administration that is the PCG is replete when it comes to qualification standards.

In addition, Valentino Ferre quoted from his dissertation that Captain Victorino Vasco, the former MARINA Administrator asserts that:

"You probably have an enlisted man with no college education assigned to Manila to inspect ships. Most of these people have no experience in boarding and inspecting a commercial vessel... because he knows little, the inspector will probably approve the vessel for sailing even if it is not seaworthy."

Source: Valentino Ferre, WMU Dissertation (1994)
2.3.4 Career Pattern of PCG Officers

Being one of the specialized units of the PN, the PCG career pattern depends on the discretion of its mother unit. There are some procedures that the PCG follows concerning the PN’s career pattern policy. One of the career path of PCG officers and enlisted personnel is the “rotational policy system,” a program inherited from its mother organization, the PN. In addition, Benedicto Selerio (1998) discussed and explained with the author about few other systems which are applied by PCG in assigning its officers to various positions. He described that the PCG is assigning officers by means of “lateral transfer” and also through “eligibility batch profile” wherein a candidate Coast Guard officer should have to undergo an examination to establish eligibility and areas of specialty.

a. Rotational Policy

As discussed by Joel Garcia, (WMU Dissertation), Rotational policy is the continuous rotation of personnel to and from different naval units. The PCG is considered to be one of the major units of the PN; as such, the officers and enlisted personnel are being rotated periodically to assignments and duties with the other units of the PN. For instance, the overall commander of one of the PCG’s districts, after completing the mandatory period in that assignment, will then be transferred to other units of the PN.

b. Lateral transfer of navy officers to the PCG organization

The lateral transfer is the same as that which results from the rotational policy, but the difference is, an officer serving as a specialized navy officer for about 5-10 years in the military profession can be possibly transferred and assigned directly to the PCG and immediately hold any key position within that Organization.
The purpose of the coast guard eligibility batch profile is to allow selected PCG personnel to take a specialized examination qualifying them to hold specific positions within the PCG's organizational structure.

Achieving better professionalism and specialization on the part of the PCG organization is one of their problems. From the WMU Dissertation written by Maximo Mejia Jr., he described that the Philippine Marines (PM) which is also one of the component of the Philippine Navy has a control on its personnel's assignment. In comparison with the PCG, PCG has no control over its personnel's assignment because it is influenced by PN's career pattern.

The rotational policy of the Philippine Navy is affecting a lot the achievements of the PCG specifically to its maritime safety operations. Due to this policy, the PCG could not maintain any possible specialization programs for its officers. Why? Because the rotational policy system allows only two years service for PCG officers and technical personnel. As such, PCG officers are having a hard time to specialized in their specific functions.

2.4 Analyzed Problems

From the previous parts of this Chapter, there are problems studied and analyzed by the author. One of these is the sources of PCG officers. The differences of educational background among PCG personnel is the second one and the third is, who will provide the technical and specialization training to make the officers competent enough to perform shouldered task of the PCG organization in promoting maritime safety?
Lately, the former President of the country, President Fidel V. Ramos signed the transfer of the PCG to the Department of Transportation and Communication (DOTC). But the question remains: Is there still a control of personnel from the Philippine Navy over PCG although the former has been transferred directly to the DOTC (due to the composition of its personnel)? Now, if the PCG has no definite source and supply of maritime safety personnel, who will provide this necessity?

Meanwhile from the identified problems by Valentino Ferre in his dissertation, he described some of the weaknesses of the PCG organization that until now needs some attention.

"The lack of knowledge and skills of PCG personnel to efficiently and effectively carry out maritime safety functions and associated maritime safety duties."

Source: Valentino Ferre, WMU Dissertation (1994)

Clearly the relevance of the present educational background of PCG officers and technical personnel from with different sources of educational discipline does not match with their duties as maritime safety personnel. As a result, the PCG is in need of qualified surveyors that until now is suffering from insufficient marine surveyors in most of its satellite stations. As for instance, if the officer (marine surveyor) in charge of conducting surveys attended an important conference, enlisted personnel are forced to do the survey and inspections to a particular vessel and without their desired skills, issue a Certificate of Inspection (CI). The author believes that these problems are the main cause of ineffective and inefficient performance of the functions of the PCG.

To resolve these problems, it becomes necessary to educate technical personnel to form the core of the PCG organization. The PCG has only an upgrading training
center and this is not enough to provide the knowledge and training appropriate for a very complicated job of maritime safety personnel. Therefore, the best and possible way is to establish a specialized maritime safety school. Or to use the existing state maritime academy, the Philippine Merchant Marine Academy (PMMA) as a source of PCG officers and technical personnel to immediately answer the maritime safety needs.
3.1 Overview of the Maritime Education and Training System in the Philippines

The Maritime Education and Training (MET) in the Philippines was originally governed by Department of Education Culture and Sports (DECS) Order No. 111, s. 1987. In 1991, the MET system was revised by DECS and approved by the Commission on Higher Education (CHED) through DECS Order No. 38, s. 1991 forming the three Bachelor Courses, namely: the Bachelor of Science in Marine Transportation (BScMT); Bachelor of Science in Marine Engineering (BScMarE); and the Bachelor of Science in Naval Architecture (BScNAME). Likewise, Basic Seaman Course (BSC) as the basic training program of the Engine and Deck Personnel.

3.1.1 Minimum Standard requirements for the BScMT Program (CHED, s. 1991)

The DEC’s Order No. 38, s. 1991, prescribes the admission and the minimum standard to qualify in the BScMT program. In the said order states that students could enroll for the BScMT program if they passed the National College Entrance Examination (NCEE) as a requirement for the bachelor degree program. Now, if for instance an applicant who wants to enroll for the BScMT course but not able to pass
for the national examination (NCEE), this applicant could enroll in the diploma course.

Meanwhile, the BScMT program require 178 credits that includes that a 40 credit units. However, students who have earned only a 170 units could be able to qualify for the graduation.

The BScMT program curricular structure as illustrated in Figure IV consists of four phases. Each phase consists of two semesters. The apprenticeship or the shipboard training period in this course could be taken either on the third or fourth year of the academic studies which normally depends on the institution's curricular structure.

3.1.2 Minimum Standard Requirements for the BScMarE Program (CHED, s.1991)

The Bachelor of Science in Marine Engineering (BScMarE) is designed to produce adequate and trainable to be qualified as Junior Marine Engine Officer. The program is structured with a three year academic studies and one year apprenticeship training. The admission requirements for this course require a national examination that leads to a degree of Bachelor of Science in Marine Engineering. The maximum credit units including a 40 units of shipboard practices is 178 credits. However, the credited units allowing the candidate for graduation limits to a 170 credit. The shipboard training practice for BScMarE is the same as of that applied in the BScMT program.
3.2 The New MET Policy as Approved by the Commission on Higher Education

The changes in the 1978 Standards of Training Certification and Watchkeeping Convention (STCW’78) as introduced in the new STCW version of 1995 prompted
the Commission on Higher Education to formulate new standards for MET institutions. The new standard requires the minimum credit units of 165, and 190 credit units for BScMT and BScMarE, respectively. The new CHED requirements likewise contain the prescribed curricular structure as well as the description of all the subjects for both courses.

Moreover, additional short courses for the basic safety programs were introduced by CHED that covers Fire Prevention and Fire Fighting, Elementary First Aid, Personal Survival Techniques, Personal Safety, and the Social Responsibility modules.

Referring to Appendix VI, the education and training system in the Philippines is only linked with the seabased personnel. Based from that drawing, maritime safety courses which are normally the basic foundations of the maritime safety administration is not integrated in the normal maritime education and training scheme. The system only illustrates the overall view of the present maritime education and training for the seabased personnel. Normally, the maritime safety administration is under the control of the Philippine Navy. The only means to train this personnel is to use the Coast Guard Training Center (CGTC) with a few courses related to their functions.

There are also various maritime training centers who are conducting specialized training, but these specialized training courses are only applicable to the merchant marine side. Also, these training centers are not linked with the CGTC. The CGTC is a specialized training center only for coast guard personnel and likewise, the CHED, DECS and the maritime Training Council (MTC) has definitely no control to the CGTC.
Maritime safety courses applied in the Philippine MET system are classified as advanced courses for officers in the merchant marine profession. Most of these courses as offered by the maritime training centers are designed to suit and upgrades a seafarer's knowledge and skills. These courses are only fitted for the needs of the seafarers and do not include maritime safety personnel as employed by the PCG organization. Also, most of the MET institutions in the Philippines were designed only for the merchant marine profession.

The Author believes that maritime safety program is one of the important parts of the merchant marine field due to the expanding sea trade. Unfortunately, it was not seen by most of the curriculum developers in the Philippines. Due to the absence of the said course, the maritime safety administration (PCG) is unable to train, educate and employ qualified marine surveyors and safety inspectors. The ultimate results to inefficient performance of the PCG organization. These problems would be even more highlighted once the PCG is transferred to the Department of Transportation and Communication (DOTC) as one of the later's attached agencies.

Cognizant of the problems and the need for a maritime safety program, two courses of action could address the issue. The first is to establish a separate academy which can provide the training and education for future PCG Personnel. But this entails a very long process which will take some time and will require more financial and other resources. Other factors to be considered are the demand and future requirements. The current situation in the country may not support the establishment of a separate institution. The second course of action is to develop a new course for future PCG personnel and incorporate it to the present and existing maritime institute which is the Philippine Merchant Marine Academy. It is more feasible to use the
Government's merchant marine academy. By introducing a specialized course that will cater the needs of the maritime safety administration.

3.4. Brief History of the Philippine Merchant Marine Academy (PMMA)

The Academy has been producing well trained merchant marine professionals since it was founded under the Spanish Era in 1820 through the Escuela Nautica de Manila (ENM). In 1900, the school was renamed Philippine Nautical School (PNS). During those period, the school were headed by United States Navy Commanders. It continuously produce more competent merchant marine officers through its two year academic study program plus a two year shipboard training exercises from its Nautical Studies course. During World War II, the PNS was expanded by the Japanese Imperial Army, thus developing new courses to produce merchant marine engineers and ordinary seamen.

In 1963 the Republic Act (RA) 3680 was issued converting the Philippine Nautical School to Philippine Merchant Marine Academy (PMMA). At the same time, two courses for maritime studies were introduced in the PMMA curriculum. These were the Bachelor of Sciences in Marine Transportation major in Navigation and Seamanship and the Bachelor of Science in Marine Engineering major in Steam Engineering and Electricity Courses.

When the International Maritime Organization representatives Capt. Mohammed Zakaullah and Engineer Jacob Rosenthal visited the Academy in the early 80’s, they implemented the three-year modernization program that was undertaken by the Philippine Government and the United Nations Development Program (UNDP). The old curriculum that offers a two-year of academic study with a two-year apprenticeship training was modified accordingly. The apprenticeship period was shorten that became one-year sea training and the academic studies became three
years and the academic scheme resulted in the sandwich method. The shipboard training was placed in the third year of the curricular structure allowing the last year of study period to be the professionalization stage. That scheme helped the academy that result in the unprecedented growth as a maritime training institution but this scheme was did not stay longer when another major revision was created by Commodore Gil S. Fernandez.

In the early 90's, another development took place when Commodore Gil S. Fernandez became the president of the Academy in 1989. He then integrated a new program which is the Regimental System and he made major changes on the existing curriculum. When Commodore Gil S. Fernandez reviewed and studied the PMMA program, he changed the curriculum setting adopting the United States Merchant Marine Academy (USMMA), thus reducing the pre-sea orientation program into one year by transferring the apprenticeship period at the second year stage and adjusted the professionalization period into two years.

Another change which he instituted was the restructuring of the PMMA’s organization in compliance with Presidential Decree (PD) 1437 which changed composition of the PMMA’s Board of Trustees. Likewise, Commodore Gil S. Fernandez restructured the different departments and units of the Academy by defining their specific functions and providing each unit with a workable budget to achieve the Academy’s mandate. At present, the Academy is implementing a new development program taken from the new CHED policy on the standards of maritime education and training.

3.5 The Core of PMMA’s Educational Process and Training System

The mission of the Philippine Merchant Marine Academy as described in RA 3680 is to produce well trained and educated young talented Filipinos as merchant marine
professionals, naval and shoreside managers supporting the domestic and the international maritime trade. The Academy's unique educational process introduces liberal education to develop the intellectual, moral, social, and physical growth of the cadets. The molding pot of its educational process is carried out by its academic program combined with quality shipboard training. Meanwhile, the inherent leadership and discipline of the Corps of PMMA Cadets are developed through its Regimental System. Cadets training are reinforced by military drills, physical training, counseling, and disciplinary measures. Through these areas of discipline, the cadets are molded to become responsible and matured young officers qualified for the marine profession and as Naval Officers. Upon completion of a four-year academic period, cadets will be certified as Third Officers and Fourth Marine Engineers. On the other hand, cadets may opt to be commissioned as Ensigns in the Naval Reserve Force, allowing them to serve as Officers in the Philippine Navy and other units under this organization. This makes them suitable to become PCG officers as well.

3.5.1 Academic Program

The cadet's academic preparation towards marine professionalism is pursued under the three main academic bodies, the College of Maritime Transportation (CMT), College of Marine Engineering (CME) and the College of Arts and Sciences (CAS).

To become fluent and competent in speaking, writing and reading the English language, this responsibility is tasked to the College of Arts and Sciences. They ensure that the proper skills and competence should be achieved. The task of developing the cadet's ability in solving mathematical problems, research skills, creativity, and good study habits are handled by the College of Arts and Sciences
who give lessons on applied Mathematics, Physics, Chemistry, Social Sciences, and literature.

In preparing the cadets to a new life facing the maritime aspects, the two colleges, the CMT and the CME, train young cadets in different streams. The CMT is responsible in introducing various nautical studies configured as the fundamental needs of a Navigation Officer. Under this College, cadets acquire knowledge and skills in navigation, seamanship, marine cargo operation, marine electronics, meteorology and various nautical studies. The College of Marine Transportation is also providing background in Management and Practice, Economics and Law, and Labor Relationship theories which are necessary when handling shoreside and managerial positions.

The College of Marine Engineering was purposely designed to provide qualified and able merchant marine engineers both on the domestic and foreign trade. It introduces various and basic theoretical knowledge on Naval Architecture, Shipboard Engineering, Steam, Diesel and Electrical Engineering, Thermodynamics, Fluid Mechanics, Strength of Materials, and Hydraulics which are the fundamentals and the basic needs in Engineering Science.

3.5.2 Regimental System

Molding young talented cadets to become responsible officers in time is the purpose of its military discipline. The Regimental System introduced by the former President of the Academy, Commodore Gil S. Fernandez is designed to train cadets in possessing proper attitudes and social values as an officer. Likewise, the Regimental System molds cadets to acquire the sense of commitment to God, Country and Service.
The implementation of the Regimental System is pursued at the Department of Midshipmen headed by the Commandant and assisted by his Tactical Officers and the line officers from the Corps of Midshipmen.

3.5.3 Quality Shipboard Training

Theoretical aspects could not possibly attain the highest degree in the learning process, nor by practical training alone. The uniqueness of the Academy’s educational process lies on the combined theoretical and practical training. Cadets training during a one year sea course program helps them to achieve the balance of the learning process. During their one year of sea time, cadets exercise the theoretical application to practical exercises guided by their shipboard log-book. The shipboard log-book containing the list of practical exercises combined with calculation and analysis of data is designed in every phase to be answered by the cadets. These are further sent to the Academy for assessment. After their actual one year sea-time, the information sent to the Academy regarding the cadets’ sea-time will be further evaluated by the Department of Shipboard Training (DST) office at PMMA.

3.6 The PMMA: Providing Education and Training for PCG Future Personnel

The concept of the PCG’s mission and functions relating to Marine Protection, Marine Operations, Marine Law Enforcement, and Marine Search and Rescue Operations definitely requires specialized personnel to carry out these functions. However, acquiring the specific training, knowledge and skills puts a demand on creating a Coast Guard Institute in order to satisfy these vital requirements. But establishing and developing a new institution could take a long period of time before it may reach its full operational condition. Also, building a new institution requires
new facilities, training materials, resources, and various factors. Looking towards resolving this case, an alternative solution is to utilize the existing Government institution which is the PMMA and develop a course for the future needs of the maritime safety administration.

Having been said that the Academy is the only maritime training institution governed by the government and structured with the minimum standards that meets the set standards of training under the new STCW convention, it is feasible that this alternative solution could provide the education and training needed for future PCG officers.

3.7 Expanding the Essential Needs of Future PCG Officers

As described by Republic Act 5173 that the major functions of the PCG deals with the promotion of maritime safety, marine environmental protection (PD 600, 601,602), aids to navigation, and search and rescue operations within the territorial waters of the Philippines. Now, with efforts geared towards transferring the PCG to the Department of Transportation and Communication, this instance may possibly affect the supply and demand of PCG officers. In up to one's ears, the Philippine Merchant Marine Academy and the Philippine Coast Guard could cooperate and work 'hand in hand' to avoid the shortage of PCG officers. It can only be done by developing new courses in the PMMA to support the demand of PCG line officers. In view of the development of a new PCG course, the design should cover the major functions dealing with maritime safety, aids to navigation and maritime search and rescue operation.

Looking back to section 3.2, it is very clear that only the seafaring industry was given importance with regards to education and training due mainly that the PCG is one of the units of the Philippine Navy and the educational sector of the country has
definitely no control to it. That is the reason why the PCG safety personnel were not
duly trained in their respective functions and this could only be done through the
proper cooperation between the PCG and PMMA. In this particular case, the
academy could expand the needs of the PCG through developing a new course.
Chapter IV

Development of BScMSA Course in the PMMA

The recent transfer of the PCG from the Department of National Defense (DND) to the Department of Transportation and Communication is envisioned as a major step in rationalizing the country's maritime administration. The transfer further aims to strengthen the PCG in its performance to vessel safety regulatory functions.

The utmost need of the PCG organization is to acquire competent officers and technical personnel to achieve a lasting answer on their problems of qualified marine surveyors and inspectors. Hence, the foregoing Chapter is intended to discuss the proposed plan for the development of a PCG course at the PMMA thereby formalizing the training of maritime safety personnel.

At the early stages of this Chapter, the author will examine and evaluate some of the maritime safety related courses from developed countries like Japan and the United States, then analyze the differences in structure and curriculum systems, and determine their applicability to the Philippine system. The later part is intended to describe the authors' proposal for the new maritime safety program.
The Japanese Maritime Safety Academy (JMSA) was established by the Maritime Safety Agency of Japan as an auxiliary body in 1951. The academy was designed to provide Bachelor courses for maritime safety administration. Full attendance in the JMSA consists of a four year academic study with an additional half year postgraduate program. The curriculum is composed of three semesters (equivalent to three years) in the general education program and one semester in the specialization stage. After completing the program, there is an additional six months of on board which is an additional point on the specialization process as related to other maritime safety services.

Basically, the JMSA has two sets of scheme in its specialized education system. One of these is based on the administrative functions and the other is based on Seamanship program.

The General education in the JMSA has three major course as illustrated in Figure V. At the end of the last three consecutive semesters, the courses separates in three areas of specialties, namely: Marine Navigation; Marine Engineering; and Communications.
General Education (From 1st-3rd year)

Course 1 (Navigation)  
Course 2 (Engineering)  
Course 3 (Com.)

(Fourth year of studies Plus 6 Months Shipboard Training, Specialization Period)

Bachelor of Science in Maritime Safety  
(Graduate of MSA Course)

National Examination for Maritime Licenses  
(Written, Oral and Medical Examination)

3rd Class Marine Navigator  
3rd Class Marine Engineer  
1st Radio Oper. (Gen. Svcs.)

(Licenses)

Figure V. Curriculum Layout of the Japanese Maritime Safety Academy

The JMSA courses has basic foundations based on the general education process. The general education consists of subjects in foreign languages, health and physical education. Such three subjects were categorized in three parts which deals with the humanities, social and natural sciences for the general education program as a prerequisite of the degree course.
The general subjects being taught to foreign language are English, Russian, Chinese, and Korean. Such special languages are very useful for the students especially during their final work as maritime safety officers for communicating purposes during emergencies. By keeping the good health of the cadets while at the academy, the JMSA is maintaining the health conditions of these cadets by giving them an additional physical education training. Most of these subjects are taken during the first three semesters with the inclusion of some specialized subjects in each courses respectively. (Refer to Appendix V). Moreover, the JMSA includes on board training program. Cadets are given shipboard training aboard vessels of domestic routes to exercise immediately the attained knowledge and skills during their study period. Further exercises for shiphandling are carried forward by cadets in the postgraduate program by a continuous three and a half month of ocean voyage.

At the end after finishing the whole program and complying with all the requirements including the postgraduate course, these cadets will automatically employed as maritime safety personnel in the Maritime Safety Agency (MSA) of Japan. They start as junior staff at the agency as engage in maritime safety duties like search and rescue operations, controlling maritime criminals, securing maritime traffics and implementing rules and regulations that pertains to the protection of marine environment.

During their career, they are rotated to different functions as shore personnel and seabased personnel onboard big ships. Whilst at the shoreside base, they work as in charge of making plans and framing projects to develop the maritime safety administration of Japan consulting other agencies for such actions.
Another maritime safety institution established by the Japanese Authorities was the Maritime Safety School (MSS). The main purpose of the MSS is to provide specialized training and skills towards maritime safety. Graduates of MSS are automatically employed as maritime technical personnel in the Japanese Maritime Safety Agency. The difference between the two safety school, the JMSA and the MSS respectively is their cadets status after graduation. The JMSA cadets after they finished with their training at the Academy could work as junior officers whilst the MSS cadets, after are specialized in the technical field under the maritime safety administration of Japan.

Basically, MSS offer five courses directly focused on the Maritime Safety Agency's operation: the marine patrol; rescue missions; operations in aids to navigation; and hydrographic survey. There are three major curricula as taught at the MSS, namely: the operations and navigation system; information system; and marine science.

- **Curriculum on Operations and Navigation System**

  The Operations and Navigation System as a one year course program is subdivided in three levels such as navigation, engineering and pays master courses. These three courses are having common subjects about the control of marine criminal activities, monitoring of marine pollution, search and rescue operations.

- **Curriculum on Information System**

  Communication course in the Information System curriculum has a period of two-year study program. There are common subjects being taught in this course with the operations and navigation systems. It consists of a two year program divided in two
separate program arrangements. One is the communication courses wherein the control of marine criminal activities, monitoring of marine pollution, the search and rescue operations are being taught. The background is designed to impart theory and practice, operation, maintenance and servicing of communication equipment. The other program which is the aids to navigation meets the required skills and knowledge for the operations of navigational equipment and its maintenance.

- **The Marine Science Curriculum**

Marine science curriculum is a one year program that practices marine and astronomical observation, making of sea charts, and surveying. By completing the course, candidates could acquire a qualifying status as follows:

- Assistant Surveyor,
- 4th-grade small marine vessel operator; 1st-grade special marine radio operator;
  2nd-grade land radio operator,
- Surveyor (after two or more years of actual service)

In the Maritime Safety School, the on-board training is designed to carry out training on ships' surveys and vessels for aids to navigation research. The Patrol Vessel MIURA being the training ship of the MSS is used in developing the knowledge and skills of each student in making them accustomed for sea operations.

4.3 **The United States Coast Guard Academy**

In line with the United States of America (USA) maritime safety agency, a specialized organization dealing with such matters contributed to the highly improved maritime safety and environmental protection. This organization is the
United States Coast Guard (USCG) that enhances and encourages clean environment for the future generation.

The USCG which is the maritime safety agency under the supervision of the Department of Transportation (DOT) has different objectives in promoting a clean sea environment. This is done by enforcing and implementing marine emergency preparedness; marine transportation management; environmental law enforcement; and pollution response.

A wide scope of responsibilities could be very hard to achieve by every organization if some of the important factors are missing like for instance, resources; budget; organizational structure; proper management and cooperation between organizations. In the case of the USCG as a federal organization, these factors are definitely supporting the organization like for instance, personnel resources. Every year, the USCG is employing graduates from the United States Coast Guard Academy (USCGA) as commissioned junior officers afloat USCG vessels. These young junior officers are especially trained for the missions of the USCG. The USCGA supports the coast guard by sending newly commissioned ensigns to report directly to their primary duties at the USCG.

4.3.1 Brief History of USCGA

The USCGA since it was founded in 1876 became the major source of coast guard officers serving USCG. The USCGA being proud to be the finest and the most selective federal academies in America provide a four-year Bachelor of Science program in full scholarship grant. As a federal Academy, congressional appointments are not accepted by USCGA as it is done by other federal service academies. The USCGA started and originated as the School of Instruction for Revenue Marine (SIRM) in 1876 and trained nine cadets onboard the schooner Dobbin operating at Fisher Island near New Bedford in Massachusetts. The Dobbin
was replaced by the 106-foot barque Chase in 1878 and the Chase was permanently ported in Arundel Cove, Maryland in 1900. Even though that the Chase serves as the training vessel of the SIRM, it is likewise supported by a shore side classroom instruction supplementing the shipboard training programs. In 1907, the old Chase was replaced by the cutter vessel Itasca and became the new training vessel of the SIRM. Ten years after, the SIRM was transferred to its new site in Fort Trumble, an Army coastal defense installation located in New London, Connecticut. Years after, in 1914 the academy was renamed Revenue Cutter School of Instruction (RCSI) and decommissioned the Itasca replacing her with a cutter vessel Hamilton. After seventeen years, the academy was moved to New London where it continued to train cadets aboard its sea-going training platform called Eagle.

Now the modern academy commissions approximately 175 ensigns annually who are obliged to serve in the USCG for five years. Each year, approximately about 275 applicants starts with the “Swab Summer” as the first step in a four-year program to become commissioned officers in the USCG. The combined education and military training enables the cadets to adjust from civilian to military life in a year regimen period.

4.3.2 The Mission of the USCGA

The Academy’s mission is to provide excellent academic program for students by a challenging atmosphere on its academic programs and structured military training. As categorized in four primary objectives, the Academy provides perceptive and model environment commissioning through high sense of honor, loyalty, and obedience. It supports undergraduate education which is very useful to the interest of the United States Coast Guard (USCG). A molding pot of future leaders in the USCG and enable graduates to assume duties as junior officers at the USCG.
4.3.3 Courses Offered at the USCGA

The USCGA has eight major courses in Bachelor's degree program composed of civil engineering, electrical engineering, management, marine and environmental sciences, mechanical engineering, naval architecture, marine engineering, and operation research. The Academy is fully accredited by the New England Association of Schools and Colleges (NEASC). All the engineering courses at the USCGA are likewise accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). The academic curriculum includes the following subjects such as: chemistry I and II; physics I and II; calculus I and II; introduction to Engineering and design; introduction to electrical engineering; nautical science I, II, III, and IV; economics; American government; English composition and speech; criminal justice; maritime law enforcement; leaders in United States history: morals and ethics; literature of leadership; organizational behavior; leadership and organizational development; oceanography; and the probability and statistics. In order to earn a Bachelor of Science degree, students should have to complete the minimum credit units of 126 hours.

At the end of the day, these cadet is granted with a Bachelor's degree certificate and commissioned as ensign in the USCG to become maritime safety officer.

4.4 Relevance of the Two Systems in the Development of the Maritime Safety Program

Maritime safety has become a specialized field due mainly to the enormous developments that have been taken place in the maritime industry. It thus becomes necessary for maritime administration to employ people who are not only knowledgeable on the rules and regulations on safety of shipping and protection of
the marine environment but also experts on the enforcement of such rules and regulations.

Among other academic discipline, the JMSA and the USCGA both offer baccalaureate courses which are especially designed to train personnel who are destined to serve in their respective maritime administrations. Their grass-roots approach in educating their prospective personnel is the main source of strength of both country's Administrations. The educational system in this setting ensures that the core of personnel of the organization are properly trained and actually become experts in maritime safety matters.

It is quite reasonably so that the educational systems in both countries are almost always looked into when other Administrations plan to develop and improve their own systems. The JMSA and the USCGA maritime safety educational systems ensure their Administrations' safety and environmental integrity.

In the Philippines, such schools with the quality standards of training and educating maritime safety personnel is the utmost need especially by the organization concern in bringing the highest point of safety to life and property at sea. Before establishing this training institution, a lot of fundamental elements that needed to be consider and different factors that would influence it when it starts to operate. From this particular view, it is best to develop what possible steps should be done to start with it. First and foremost, the nature of creating a new school starts from the needs of the society. By looking deeper to the situation, there is a need of establishing the mean heart wherein defining the relevance of creating a new program. Thereby, the following section will discuss further on how the program be started.
4.5 Steps in Developing a Curriculum for the New Maritime Safety Program

In development, there are things to consider. In this case, developing a curriculum has three phases. These are the planning, designing and development stages. By integrating these three parts could form a ‘curriculum’. At first, he author will define these three basic elements of the curriculum:

a. **Planning**

In most cases, curriculum developers should know exactly the plan is, but before the program starts, there should be a group of individuals doing the program. Sometimes this especial group is called ‘curriculum developers’. Normally curriculum developers are those individuals involve in education. As for instance, a group of teachers from a particular academy wants to develop a program that fits the needs of their students in a certain subject. From that particular subject, the group itself starts to their work by analyzing the possible areas which are relevant to the subject. As a first step, they initialize to create a written document before the commence with the task. This document whom they created should contain all the relevant steps in the planning. As an example to this is illustrated by the author in section 4.5.1 wherein this section deals with the possible parts contained in the proposed plan in developing a new maritime safety course at PMMA.

b. **Design**

After the planning stages, it should be followed by designing a course, but in some cases, this two elements comes together during the initial process. Now, since the situation goes like that, developers should at least have the knowledge in the task being undertaken. When the planning starts as the design commences too,
developers should be aware of the possible changes that will took place during the process.

Meanwhile, during the design stage, it is very essential to know really the whole coverage of the plan. Through this, it would be easy to identify the areas and elements like for example, what subjects should be incorporated within the program, what curriculum structure should be followed in the process, materials to be included to the course to be develop.

c. Development

At the end of the two stages, development should follow in the sequence. In this case, conceptualizing these three elements could further develop a well structured curriculum. Finally, the curriculum should be implemented, thus allowing developers to analyze further the changes that would take place in the development stage. In considering these steps, it would be possible to start creating a new course for the maritime safety program. Now, the following sections in this study shows some of the possible points to be considered by curriculum developers for the BScMSA program.

4.5.1 PCG-PMMA Memorandum of Agreement

In the agreement, the author believes that the following factors should be identified as factors which are important to be included with a careful study on the importance at the early planning, namely:

- identifying the fundamental needs of the PCG for the training;
- determining the educational and training arrangement; and
- the Professional career of cadets after graduation.
The essentiality of identifying the PCG’s fundamental training needs is one of the important factors due mainly to determine the possible areas to be covered by the proposed program. It also provides an appropriate guidelines on the possible changes during the working period for the preparation or planning stage. At this moment, the PCG could pinpoint immediately the possible areas needed in the proposed plan and could give some of its ideas. Whilst on the part of the PMMA, it would be easy to formulate a plan to undertake the areas concerned in the program. Now, it would be very flexible for both parties to come up with a good solution.

Determining the educational and training arrangement could give an assurance that the focus of the proposed program coincide with the needs of the PCG. It serves as a guide for the working body to focus on the right path. Also during this process, the formulation of the possible objectives of the course could be created immediately to determine the direction of the course. The creation of the curriculum structure could be done at this stage determining the possible phases of the training period.

Career pattern is a very useful tool in achieving further development for professionalism and specialization in the future career. The advantages of planning the career path at the early stage could give the full working view of the process. In this case, it would be easy to adjust and point what necessary changes should be done in the program. In other words, it would serve as the monitoring system for evaluating the course.

4.6 The Proposed Maritime Safety Curriculum

To give a full overview of the proposed Bachelor of Science in Maritime Safety Administration (BScMSA) program, the author wishes to describe and discuss briefly some of the parts of the course. In structuring the proposed program, it is best to identify first the course aim and objectives; curricular structure; subjects to
be incorporated for the program; training facilities and equipment; and practicable training exercises.

4.6.1 The Course Aim and Objectives

The proposed maritime safety program is aimed to provide well trained and competent maritime safety officers to serve the PCG organization and work to achieve the functions of the maritime safety administration by promoting a safe and clean marine environment.

The objectives are to train young talented Filipinos as fully motivated and responsible maritime safety officers equipped with the necessary knowledge, skills and attitudes. Develop an effective and efficient safety officer for the PCG. Adopting the good morale and high valued attitude of an officer and a gentleman and by imparting to them the mission and functions of the PCG.

4.6.2 The Curricular Structure

Based from the two systems discussed earlier between the Japanese and the American safety administration's curriculum, both systems could be applicable in the Philippine Maritime Education and Training (PMET) system but it depends directly to the availability of ships to be used for shipboard training practices. Although the two systems could be very flexible, still it needs some modification to be able to fit in the PMET system.

In the description of the JMSA curricular structure, the specialization between the three field of studies is done in the last semester (Fourth Year Stage). The additional shipboard training for six months allowing candidates to finish the postgraduate course. In regards to the proposed plan (See Figure VI), the specialization period in
one year could only satisfy some of the general education subjects. Whilst in Figure VII having the first two years at the early stages could benefit in satisfying all the requirements for general education and could start in the basic introductory subjects for the specialized course. The remaining year (Fourth Year Period) in Figure VII is centered directly towards specialization. In comparison with the illustration in Figure VI, the last two consecutive years could cover all the specialized subjects for each course.

Figure VI. **General Description of the Proposed BScMSA Curricular Structure**
(Including PMMA Existing Programs)
As illustrated from Figure V of the JMSA curricular structure, the first three years are centered in the general education and the later part is focused towards specialization. Based from that (Figure V), the author’s proposal for the proposed structural plan of the PCG’s BScMSA’s general education could be taken from the first year stage. (See also Figure VI). Neither, it could be done in two years to cover all the subjects needed in the general education program as illustrated in Figure VII.

**Figure VII. Proposed Structure of the Two-Year General Education Layout**
(Includes PMMA Programs for BScMT & BScMarE)

On the other hand the USCGA maritime safety program is quite best, but since that the PCG and the Academy is incapable of providing their own training ships, it
would be difficult to achieve to train these cadets between each semesters. In this case, the availability of training vessel should be considered too.

4.6.3 Subjects to be Incorporated for the Proposed BScMSA Course

There are a lot of model courses existing in the Philippine MET system. Some of the International Maritime Organization’s Model Course (IMO-MC) programs were only adopted by a few maritime institutions and training centers. These short courses mainly fits the seafaring industry or the seabased personnel. In the IMO-MC list (Table I), 29 of which were already implemented in the PMET system and about 25 IMO-MC’s which are not yet implemented.

Table I. **IMO Model Courses Implemented in the PMET System**  
(Source: L Fajardo, DOLE)

<table>
<thead>
<tr>
<th>IMO Model</th>
<th>IMO Model Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.01</td>
<td>Oil Tanker Familiarization</td>
</tr>
<tr>
<td>1.02</td>
<td>Advanced Training Programme on Oil Tanker Operation</td>
</tr>
<tr>
<td>1.03</td>
<td>Chemical Tanker Familiarization</td>
</tr>
<tr>
<td>1.04</td>
<td>Advanced Tanker Program on Chemical Tanker Operations</td>
</tr>
<tr>
<td>1.05</td>
<td>Liquefied Gas Tanker Familiarization</td>
</tr>
<tr>
<td>1.06</td>
<td>Advanced Training Programme on Liquefied Gas Tanker Familiarization</td>
</tr>
<tr>
<td>1.07</td>
<td>Radar and Observation Plotting</td>
</tr>
<tr>
<td>1.08</td>
<td>The Operational Use of Radar Plotting Aids (ARPA)</td>
</tr>
<tr>
<td>1.09</td>
<td>Radar Simulator</td>
</tr>
<tr>
<td>1.11</td>
<td>MARPOL 73/78 -- Annex 1</td>
</tr>
</tbody>
</table>
The IMO-MC No. 7.02 and 7.04 for Engine Officers were already introduced in the PMMA curriculum when the Representatives from the IMO visited the Academy and revised the old PMMA curriculum in 1981-1984.

Table II. **IMO Model Course for Implementation in the PMET System**  
(Source: L Fajardo, DOLE)

<table>
<thead>
<tr>
<th>Model Course</th>
<th>Title of Model Courses (Not Implemented Yet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.01</td>
<td>Maintenance Planning and Maintenance Execution</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>2.02</td>
<td>Maritime search and Rescue</td>
</tr>
<tr>
<td>2.04</td>
<td>Maritime Law for ship’s Officers</td>
</tr>
<tr>
<td>2.05</td>
<td>On-Board Ship Administration</td>
</tr>
<tr>
<td>2.08</td>
<td>Fuel Combustion Efficiency</td>
</tr>
<tr>
<td>3.01</td>
<td>Tonnage Measurement</td>
</tr>
<tr>
<td>3.02</td>
<td>Survey of Small Craft</td>
</tr>
<tr>
<td>3.03</td>
<td>Survey of machinery Installations</td>
</tr>
<tr>
<td>3.04</td>
<td>Survey of Electrical Installations</td>
</tr>
<tr>
<td>3.05</td>
<td>Survey of Fire Appliances and Provisions</td>
</tr>
<tr>
<td>3.06</td>
<td>Survey of Life-Saving Appliances and Arrangements</td>
</tr>
<tr>
<td>3.07</td>
<td>Hull and Structural Survey</td>
</tr>
<tr>
<td>3.08</td>
<td>Survey of Navigational Aids and Equipment</td>
</tr>
<tr>
<td>3.09</td>
<td>Port State Control</td>
</tr>
<tr>
<td>3.11</td>
<td>Marine Accident and Incident Investigation</td>
</tr>
<tr>
<td>3.12</td>
<td>Examination and Certification of Seafarers</td>
</tr>
<tr>
<td>3.13</td>
<td>Maritime Search and Rescue Administration</td>
</tr>
<tr>
<td>3.16</td>
<td>Oil Pollution Liability and Compensation</td>
</tr>
<tr>
<td>5.02</td>
<td>Port Logistics</td>
</tr>
<tr>
<td>5.03</td>
<td>Planned Fleet Maintenance and Hull</td>
</tr>
<tr>
<td>5.04</td>
<td>Human resource and Management</td>
</tr>
<tr>
<td>6.03</td>
<td>Aspects of Ship Administration for Company Office Staff</td>
</tr>
<tr>
<td>6.08</td>
<td>Maritime Law</td>
</tr>
<tr>
<td>7.01</td>
<td>Master and Chief Mate</td>
</tr>
<tr>
<td>7.02</td>
<td>Chief and Second Engineer Officer</td>
</tr>
</tbody>
</table>

(Continuation of Table II)
In line with the proposed program for BScMSA, some of the Model Course listed in Table II are relevant for the area of specialization in the proposed BScMSA program. In the list below, the possible IMO Model Courses to be included are the following:

- Maritime Search and Rescue,
- Tonnage Measurement,
- Survey of Small Craft,
- Survey of Machinery Installations,
- Survey of Electrical Installations,
- Survey of Fire Appliances and Provisions,
- Survey of Life-saving Appliances and Arrangements,
- Hull and Structural Surveys,
- Survey of Navigational Aids and Equipment,
- Port State Control,
- Marine Accident & Incident Investigation,
- Maritime Search and Rescue Administration,
- Human Resources Management, and
- Maritime Law

These courses are very useful because they reflect mainly on the mission and functions of the PCG organization.

4.6.4 Training Facilities and Equipment

The BScMSA is basically different from the two existing courses in the PMMA. This program is designed for maritime safety unlike the two courses that are designed for purely merchant marine field. Due to this particular case, some of the possible equipment could not be applicable for the BScMSA program. In some cases that refers to the general educational program, there are equipment for laboratory
exercises that could be very useful for the BScMSA program. Only of the equipment for specialized subjects like, for instance search and rescue equipment should be provided by the PCG.

In view of the present conditions of the Academy, last January of the year 1998 the was transferred to its new location along the beautiful seaside of Zambales which could be used for future development of training facilities. That particular case could be very useful for future preferences of the proposed program. It would benefit by building a new facility that could help in achieving a good training for specialized subjects such as lifeboat handling and search and rescue operation. Likewise, the proposed plan for establishing simulator training facilities at the Academy could help the proposed plan for training. Now, it is really a right moment for the PCG to take its first step in developing its program at the Academy (PMMA) considering these factors. With the huge area of the PMMA in Zambales, it could possibly accommodate the BScMSA for the future sources of PCG officers.

4.6.5 Practical Training Exercises

In the PMMA existing BScMT and BScMarE programs, the shipboard training practices are done at the second year period of the curriculum. The coverage of the shipboard training is at least twelve months duration. The minimum training for shipboard practices is only allowed for ten months. There are also short Shipboard Training Laboratory (STLab) during weekends. Every Sundays, a full day lecture with a shipboard tour is conducted on board vessels docked at the Manila harbor. These vessels serve as laboratory for cadets. The purpose of this training is to allow cadets to be familiarized with the functions of the equipment on board. The STLab program also conducts short lectures for cadets.
On the other hand, the proposed safety program could likewise design in the same manner with the PMMA courses. The only difference is that the shipboard training will be for six months on board and another six months will be spent at the PCG headquarters. The purpose of the six months shipboard training is to familiarize cadets with the functions of equipment on board, the operations being done on board, possible safety measures in time of emergency, and safety procedures. The next six months is dedicated for the administrative functions wherein these cadets shall observe the procedures being done during emergency operations at the PCG headquarters. The later also serve as the preparatory stage for cadets on what would be their specific functions at the PCG after they finished the BScMSA program. In regards with the STLab program, cadets at BScMSA could devote their time in the PCG Headquarters to be able to familiarize themselves with the different functions and duties of PCG officers and personnel. This is very essential for the cadets because the focus of the BScMSA is towards maritime safety administration.
Chapter V

Conclusion and Recommendations

Conclusion

A nation involved in the world seaborne trade needs a strong maritime administration to enable it to fulfill its mandate of ensuring the safety of shipping and navigation and the protection of the marine environment. The gamut of international rules and regulations published by the world governing bodies of the industry constitute this mandate of states. These same rules and regulations are not definite and are bound to change in accordance to the needs of the industry. This peculiarity actually gave birth to a new specialization in the field of maritime safety and environmental protection.

Time was when practically anybody in a maritime administration can be tasked to handle a job involving vessel safety by mere interpretation of the rules. But the rules have become too complex that they now require careful and lengthy study before they can be applied. This particular situation puts a demand on maritime administrations to strengthen their organizations and, if necessary, change their safety cultures.

The Philippines has a long maritime tradition and its economy is in one way or another sustained by its trade relations with the world at large. It has a large
domestic shipping industry due mainly to its archipelagic nature. As a maritime nation, it has had its share of tragic sea accidents which, unfortunately, brings to the fore its weaknesses in its administration of maritime safety matters.

Realizing this problem, the author believes that there is an utmost need for the country to strengthen its maritime safety administration. The author has chosen the Philippine Coast Guard as a case in point for the reason that it has the existing mandate to perform this task. The author has identified the main problem besetting the PCG in the performance of its mission and functions: lack of personnel properly trained and educated in the specialized field of maritime safety (e.g. marine surveyors, inspectors, etc.). The PCG needs to be strengthened in this specialized field to enable it to perform effectively its mandated task.

The national government was in the right track in its attempt to rationalize its maritime administration when it separated the PCG from the Department of National Defense and transferred it to the Department of Transportation and Communications. But the larger task lies on how to strengthen this organization to effectively carry out its tasks. In its present organization, the PCG does not have the resources and capability to embark on such an endeavor. Factors such as budgetary constraints, facilities and the like prevent the PCG from embarking on the education and training of its personnel.

The proposed solution in this dissertation finds relevance and applicability in its simplicity. The PCG is mandated to ensure the safety of ships and the seafarers operating the ships and what more effective solution can it get than educating the administration personnel in the very same institution that produces their clients? In this way, the public servant-client interface is rightly assured at the very core of their respective developments. Of course, the solution proposed is only temporary but this is a very concrete foundation for the PCG to improve its organization.
Giving emphasis on the investigation of the current problems of the maritime safety administration and the possible solutions to the problem, the author conclude that the best answer is harmonization among government agencies in promoting one's goal.

Recommendations

By formalizing the overall maritime industry of the country specifically the needs of the PCG’s qualified personnel, a recommendation of establishing a new maritime safety institute could answer the problems in the safety aspects. Now the point of establishing this new institution could take a waste of time. Therefore, the author recommend that for the mean time the Philippine Merchant Marine Academy could be use as the sources of maritime safety officers. By doing so, the following important points should be noted first, namely:

1. The Academy should be ready to adopt the proposal for integrating a new course program for Maritime Safety Administration.

2. The PCG should notify the President of the Academy through the PMMA Research and Development concerning the creation of the new program.

3. A program committee that composed of the different agencies working in the maritime sector should be created to work with the plan for the new course. The purpose of this committee is to look into the possible areas concerning the overall view of the propose program, financial matters, resources, facilities, staff, and other related factors in running the program.

4. A Reviewing Body that composed of PCG Head, PMMA President, Philippine Regulations Commission Head in both Engine and Deck Board Examiner's
group, the Commission on Higher Education, and Representatives from the
Shipping Organization are necessary in formulating a new course.

All the above factors could be very useful in creating a new course in the maritime
Safety Administration as the first step to establish a new Maritime Safety Academy
in the Philippines.

Moreover, it is necessary that the proposed course should only cover all the
functions of the PCG as a maritime safety administration. The students who wishes
to take that particular course after their graduation should be certified as mates and
engineers only in the maritime safety sector. The difference between the existing
PMMA courses is that the two major courses in the Academy is not applicable to be
applied in the maritime safety sector. It is only bound to purely merchant marine
program whilst the PCG maritime safety course is only suited for maritime safety. If
for instance the students wanted to be certified as maritime safety officer in the PCG
coming from the two major courses of the PMMA, there is a need to enroll for one
semester or depending on the needed amount of units to be certified as maritime
safety officer. This is necessary for the reason that the specialization program of the
two courses is not basically designed for the functions of the PCG. On the other
hand, BScMSA student could only be certified as maritime safety officer but not
fully certified as merchant marine officer. To be able to qualified fully for the
merchant marine profession, students of BScMSA should likewise attend one or two
semesters for upgrading the BScMSA certificate into a full merchant marine
certificate. This is also depending on the program chosen by the student or in the
length of the study period to be able to qualify as merchant marine officer in both
fields, respectively.

Commissionship is likewise considered as relevant after the graduation. in both
cases, the BScMSA could automatically commissioned as ensign in the maritime
safety administration. They are definitely having a direct commissionship program due to the nature of their specific duties as maritime safety officers. The graduates of the two course from the Academy could only be commissioned as ensign. The status of commissioning in both cases is likewise the same, but commissioned graduates of the two courses could only have the reserve qualification not unlike the maritime safety administration students with a direct commissionship. This is due to the case that those students who graduated from the two major course of the Academy (BScMT and BScMarE) has a limited knowledge and skills in connection to the functions of the safety administration.

In summing up all the above, the graduates of the two major courses of the Academy should be certified as merchant marine officers and could have the diploma certificate as maritime safety officer. While the graduates of the new program could be certified as maritime safety officer and could have the diploma certificate as merchant marine officer. Both diploma certificate could not be used until additional units have been taken and proven to be certified by the Academy.

With respect to their commissionship, graduates of the BScMSA has a direct commissioning to become regular officers in the maritime safety administration whilst the graduates of the two major courses, the BScMT and the BScMarE respectively could only be commissioned as reserve officers.

Now, if the course is already stable with respect to its curriculum structure and at the same time the PCG is already prepared in managing a new Maritime Safety Academy, then this would be the time that the PMMA could endorse the said course to the PCG which in turn is the second step of establishing a new Maritime Safety Academy.
Finally, the PCG could employ qualified safety officers and personnel coming from its own Maritime Safety Academy without a glance of doubt.
Bibliography


APPENDIX I

OFFICE OF THE PRESIDENT
OF THE PHILIPPINES
Malacañang

EXECUTIVE ORDER NO. 125 - A

AMENDING EXECUTIVE ORDER NO. 125, ENTITLED REORGANIZING THE MINISTRY OF TRANSPORTATION AND COMMUNICATIONS, DEFINING ITS POWERS AND FUNCTIONS, AND FOR OTHER PURPOSES

WHEREAS, considering the peculiar situation obtaining in the Department of Transportation and Communications (DOTC), there is a compelling need to clarify and or modify the structural and functional organization of the Department as provided under the Executive Order No. 125 in order to ensure compliance with its mandate and the attainment of the corresponding objectives as specified in Section 4 of said Executive Order.

NOW, THEREFORE, I, CORAZON C. AQUINO, President of the Republic of the Philippines, by virtue of the powers vested in me by the Constitution, do hereby order:

SECTION 1. Sections 5, 8, 9, 10 and 11 of Executive Order No. 125, otherwise known as the Reorganization Act of the Ministry of Transportation and Communications, are hereby amended to read as follows:

"Section 5. Powers and Functions. To accomplish its mandate, the Department shall have the following powers and functions:

(a) Formulate and recommend national policies and guidelines for the preparation and implementation of integrated and comprehensive transportation and communications systems at the national, regional and local levels;

(b) Establish and administer comprehensive and integrated programs for transportation and communications, and for this purpose, may call on any agency, corporation, or organization, whether public or private, whose development programs include transportation and communications as an integral part thereof, to participate and assist in the preparation and implementation of such programs;"
(c) Assess, review and provide direction to transportation and communications research and development programs of the government in coordination with other institutions concerned;

(d) Administer and enforce all laws, rules and regulations in the field of transportation and communications;

(e) Coordinate with the Department of Public Works and Highways in the design, location, development rehabilitation, improvement, construction, maintenance and repair all infrastructure projects and facilities of the Department. However, government corporate entities attached to the Department shall be authorized to undertake specialized telecommunications, ports, airports and railway projects and facilities as directed by the President of the Philippines or as provided by law;

(f) Establish, operate and maintain a nationwide postal system that shall include mail processing, delivery services, and money order services and promote the art of philosophy;

(g) Issue certificates of public convenience for the operation of public land and rail transportation utilities and services;

(h) Accredit foreign aircraft manufacturers and/or international organizations for aircraft certification in accordance with established procedures and standards;

(i) Establish and prescribe rules and regulation for identification of routes, zones and/or areas of operation of particular operators of public land services;

(j) Establish and prescribe rules and regulations for the establishment, operation and maintenance of such telecommunications facilities in areas not adequately served by the private sector in order to render such domestic and overseas service, that are necessary with due consideration for advances in technology;
(k) Establish and prescribe rules and regulations for the operation and maintenance of a nationwide postal system that shall include mail processing, delivery services, money order services and promotion of philately;

(l) Establish and prescribe rules and regulations for the issuance of certificates of public convenience for public land transportation utilities, such as motor vehicles, trimobiles and railways;

(m) Establish and prescribe rules and regulations for the inspection and registration of air and land transportation facilities, such as motor vehicles, trimobiles, railways and aircrafts;

(n) Establish and prescribe rules and regulations for the issuance of licenses to qualified motor vehicle drivers, conductors, and airmen;

(o) Establish and prescribe the corresponding rules and regulations for the enforcement of laws governing land transportation, air transportation and postal services, including the penalties for violation thereof, and for the deputation of appropriate law enforcement agencies in pursuance thereof;

(p) Determine, fix and/or prescribe charges and/or rates pertinent to the operation of public air and land transportation utility facilities and services, except such rates and/or charges as may be prescribed by the Civil Aeronautics Board under its charter, and, in cases where charges or rates are established by international bodies or associations of which the Philippines is a participating member or by bodies or associations recognized by the Philippine government as the proper arbiter of such charges or rates;

(q) Establish and prescribe the rules, regulations, procedures and standards for the accreditation of driving schools;
(r) Administer and operate the Civil Aviation Training Center (CATC) and the National Telecommunications Training Institute (NTTI); and

(s) Perform such other powers and functions as may be prescribed by law, or as may be necessary, incidental, or proper to its mandate, or as may be assigned from time to time by the President of the Republic of the Philippines."

Section 8. **Undersecretaries.** The Secretary shall be assisted by four (4) Undersecretaries appointed by the President upon the recommendation of the Secretary.

Section 9. **Assistant Secretaries and Service Chiefs.** The Secretary shall also be assisted by eight (8) Assistant Secretaries appointed by the President upon the recommendation of the Secretary, each of whom shall respectively be responsible for the following four (4) staff offices composed of eight (8) services and four (4) line offices, and shall report to the respective Undersecretaries assigned by the Secretary which Undersecretary shall have control and supervision over said respective services and offices:

(a) Office of the Assistant Secretary for Administrative and Legal Affairs;

1) Administrative Services, and
2) Legal Services

(b) Office of the Assistant Secretary for Finance and Comptrollership;

1) Finance and Management Service, and
2) Comptrollership Service

(c) Office of the Assistant Secretary for Planning and Project Development;

1) Planning Service, and
2) Project Development Service

(d) Office of the Assistant Secretary for Management Information Service and Project Management;

1) Management Information Service, and
2) Project Management Service
(e) Office of the Assistant Secretary for Land Transportation;

(f) Office of the Assistant Secretary for Postal Services;

(g) Office of the Assistant Secretary for Telecommunications;

(h) Office of the Assistant Secretary for Air Transportation.

Each of the above-named services shall be headed by a service chief appointed by the President upon the recommendation of the Secretary.

"Section 10. Structural Organization. The Department, aside from the Department proper which is comprised of the offices of the Secretary, Undersecretary and Assistant Secretaries shall include the Department regional offices and the attached agencies and corporation referred to in Section 14 hereof.

The office of the Secretary shall have direct lines of supervision and control over the Department regional offices. The Department proper shall be responsible for developing and implementing policies, plans, programs, and projects for the Department."

"Section 11. Department Regional Offices. The Department shall have three (3) Department Regional Offices in each of the administrative regions of the country: the Department Regional Office for Land Transportation, the Department Regional Office for Telecommunications and the Department Regional Office for Postal Services. The present Regional Offices of the Land Transportation Commission are hereby abolished and their functions are transferred to the respective Department Regional Offices for Land Transportation. The present Regional Offices of the Bureau of Telecommunications are hereby abolished and their functions are transferred to the respective Department Regional Offices for Telecommunications. The present Regional Office of the Bureau of Posts are hereby abolished and their functions are transferred to the corresponding Department Regional Offices for Postal Services. Each Department Regional Office shall be headed by a Department Assistant Regional Director and assisted by a Department Assistant Regional Director. The present Airport Offices of the Bureau of Air Transportation are
hereby abolished and their functions are transferred to the Department Airport Offices. The abolition of the herein Regional Offices and the transfer of their functions shall be governed by the provisions of Section 15 (b) hereof.

The Department Regional Offices shall essentially be line in character and shall be responsible for the delivery of all frontline services of the Department.

For such purposes, the Department Regional Offices shall have within their respective administrative regions, the following functions:

(a) Implement laws, and policies, plans, programs, projects, rules and regulations of the Department;

(b) Provide efficient, and effective service to the people;

(c) Coordinate with regional offices of other departments, offices and agencies;

(d) Coordinate with local government unite;

(e) Perform such other functions as may be provided by law.

SECTION 2. Sections 12, 13, 15 and 16 of said Executive Order are hereby deleted.

SECTION 3. Section 14 of said Executive Order is hereby renumbered as Section 12 and amended to read as follows:

"Section 12. Maritime Industry Authority. The Maritime Industry Authority is hereby retained and shall have the following functions:

(a) Develop and formulate plans, policies, programs, projects, standards, specifications and guidelines geared toward the promotion and development of the maritime industry, the growth and effective regulation of shipping enterprises, and for the national security objectives of the country;

(b) Establish, prescribe and regulate routes, zones and/or areas of operation of particular operators of public water services;"
(c) Issue Certificates of Public Convenience for the operation of domestic and overseas water carriers;

(d) Register vessels as well as issue certificates, licenses or document necessary or incident thereto;

(e) Undertake the safety regulatory functions pertaining to vessel construction and operation including the determination of manning levels and issuance of certificates of competency to seamen;

(f) Enforce laws, prescribe and enforce rules and regulations, including penalties for violations thereof, governing water transportation and the Philippine merchant marine, and duputize the Philippine Coast Guard and other law enforcement agencies to effectively discharged these functions;

(g) Undertake the issuance of licenses to qualified seamen and harbor, bay and river pilots;

(h) Determine, fix and/or prescribe charges and/or rates to the operation of public water transport utilities, facilities and services except in case where charges or rates are established international bodies or associations of which the Philippines is a participating member or by bodies of associations recognized by the Philippine Government as the proper arbiter of such charges or rates.

(i) Accredit marine surveyors and maritime enterprises engaged in shipbuilding, shiprepair, shipbreaking, domestic and overseas shipping, ship management and agency;

(j) Issue and register the continuous discharge book of Filipino seamen;

(k) Establish and prescribe rules and regulations, standards and procedures for the efficient and effective discharge of the above functions;

(l) Performs such other functions as may now or hereafter be provided by law."
SECTION 4. Section 17 of Executive Order No. 125 is hereby renumbered by Section 13 and amended to read as follows:

"Section 13. Abolition/Transfer/Consolidation.

(a) The Land Transportation Commission is hereby abolished and its staff functions are transferred to the service offices of the Department Proper and the line functions are transferred to the Department Regional Offices for Land Transportation as provided in Section 14 herein. Such transfer of functions is subject to the provisions of Section 15 (b) hereof. The quasi-judicial powers and functions of the Commission are transferred to the Department. The corresponding position structure and staffing pattern shall be approved and prescribed by the Secretary pursuant to Section 16 hereof.

(b) PHL Leasing, Inc. is hereby abolished and its functions are transferred to Philippine National Lines, Inc. subject to the provisions of Section 15 (b) hereof. The Secretary of Transportation and Communications or his designated representative shall be the Chairman of the Board.

(c) The National Aero Manufacturing, Inc. and the Philippine Aero Systems, Inc. are hereby abolished in accordance with the provisions of Section 15 (a) hereof.

(d) The Civil Aeronautics Board is hereby transferred from the Department of Tourism to the Department as an attached agency in accordance with the provision of Section 15 (a) hereof. The Secretary of Transportation and Communications or his designated representative shall be the Chairman of the Board.

(e) The Maritime Training Council's function of issuing certificates of competency to seamen under LOI 1404 is hereby transferred to the Maritime Industry Authority."
SECTION 5. Sections 18, 19, 20, 21, 22, 23, 24, 25 and 26 of said Executive Order are hereby renumbered as Sections 14, 15, 16, 17, 18, 19, 20, 21 and 22, respectively.

SECTION 6. Section 27 of said Executive Order is hereby renumbered as Section 23 and amended to read as follows:

"Section 23. Repealing Clause. Presidential Decree No. 890, Letter of Instruction Nos. 263 and 371 Executive Order No. 1011 dated March 20, 1985 are hereby repealed. All laws, ordinances, rules, regulations, other issuances or parts thereof which are inconsistent with this Executive Order are hereby repealed or modified accordingly."

SECTION 7. Section 28 of the said Executive Order is hereby renumbered as Section 24.

SECTION 8. This Executive Order shall take effect immediately upon its approval.

DONE in the City of Manila, Philippines, this 13th day of April, in the Year of Our Lord, Nineteen Hundred and Eighty-Seven.

(SGD) CORAZON B. AQUINO

By the President:

(SGD) JOKER P. ARROYO
Executive Secretary
AN ACT CONVERTING THE PRESENT PHILIPPINE NAUTICAL SCHOOL INTO THE PHILIPPINE MERCHANT MARINE ACADEMY, CONFERRING THE DEGREES OF BACHELOR OF SCIENCE IN MARINE TRANSPORTATION, MAJOR IN NAVIGATION AND SEAMANSHIP, AND BACHELOR OF SCIENCE IN MARINE TRANSPORTATION, MAJOR IN STEAM ENGINE AND ELECTRICAL ENGINEERING, PROVIDING FOR A MERCHANT MARINE ACADEMY BOARD DEFINING THE BOARD'S RESPONSIBILITIES AND DUTIES, AND OTHER PURPOSES.

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled.

SECTION 1. The Philippine Nautical School located in Pasay City, Philippines, is hereby converted into the Philippine Merchant Marine Academy, which will offer a nautical curriculum leading to the degree of Bachelor of Science in Marine Transportation, major in Navigation and Seamanship and Bachelor of Science in Marine Transportation, major in Steam Engine and Electrical Engineering.

SECTION 2. The main purpose of the Philippine Merchant Marine Academy is to produce efficient and well trained merchant marine officers who can favorably compare with marine officers of progressive maritime countries sufficient to carry the expanding international trade in times of peace and capable of serving as a naval and military auxiliary in times of war and national emergency. The secondary purpose is to produce young men well trained in other fields of the merchant marine service, like marine surveyors, port supervisors, shipping office personnel, ship management and others.
SECTION 3. The head of this institution shall be known as the Superintendent of the Philippine Merchant Marine Academy. He must be at least a master mariner and shall be appointed by the President of the Philippines upon recommendation of the Philippine Merchant Marine Academy Board. The powers and duties of the Superintendent in addition to those specifically provided for in this Act, shall be those usually pertaining to the Office of the President of a College.

SECTION 4. The government of said Academy is hereby vested in the Philippine Merchant Marine Academy Board which shall be composed of the following: The Secretary of Commerce and Industry who shall be ex-officio Chairman of the Board of Marine Inquiry, with a representative of the Philippine Navy, the Chairman of the Board of Marine Inquiry, the Chairman of the Board of Marine Examination for Deck Officers, the Chairman of the Board of Marine Examination for Marine Engineers, the President of the Filipino Shipowners' Association of the Philippines, the President of the Philippine Marine Officers' Guild, the Superintendent of the Academy, as members.

Members of the Philippine Merchant Marine Academy Board shall serve without compensation, other than actual and necessary expenses incurred either in attendance upon meetings of the Board or upon official business authorized by a resolution of the Board.

SECTION 5. The Philippine Merchant Marine Academy Board shall have the following powers and duties in addition to its general powers of administration:

(a) To confer the degree of Bachelor of Science in Marine Transportation, major in Navigation and Seamanship, and Bachelor of Science in Marine Transportation, major in Steam Engine and Electrical Engineering to successful candidates for graduation.

(b) To appoint, upon recommendation of the Superintendent of the Academy, instructors, professors and other employees of the PMMA; to fix their compensation hours of service and other duties as it may deem proper; to grant to them leaves of absence under existing laws and regulations and to remove them from office for cause after an investigation and hearing and after in the opinion of the Board, there is just cause for his removal.
(c) To approve the curricula and rules of discipline drawn up by the Academy Council as hereunder provided.

(d) To provide fellowships for faculty members and scholarships to students showing special evidence of merits.

(e) To provide rules for its government, and to enact for the government of the Academy such as general ordinances and regulations, not contrary to law, as are consistent with the purpose of the Academy as defined in Section two of this Act.

(f) To receive in trust legacies, gifts and donations of real and personal property of all kinds and to administer the same for the benefit of the Academy or for aid to any cadets, in accordance with the directions and instructions of the donor, and, in default thereof, in such manner as the Academy Board may, in its discretion, determine.

(g) To receive and appropriate to the ends specified by law such sums as may be provided by law for the support of the college.

SECTION 6. A quorum of the Academy Board shall consist of a majority of all the members. All processes against the Academy Board shall be served on the Superintendent of the Academy or Secretary thereof.

SECTION 7. On or before the fifteenth of June of each year, the Academy Board shall file with the President of the Philippines a detailed report, setting forth the progress, condition, and needs of the Academy.

SECTION 8. There shall be an Academy Council consisting of the Superintendent and all the instructors and professors of the Academy. The Council shall have the power to prescribe the curricula and rules of discipline, subject to the approval of the Philippine Merchant Marine Academy Board. It shall fix the requirements for admission to the Academy as well as for graduation and the receiving of a degree. The Council alone shall have the power to recommend students or others to be recipients of degrees. Through the Superintendent it shall have disciplinary power over the students within the limits as prescribed by the rules of discipline approved by the Academy Board.
SECTION 9. The body of instructors and professors of the Academy shall constitute the faculty of the Academy with the Superintendent of the Academy as the presiding officer. In the appointment of professors or instructors of the Academy, no religious test shall be applied nor shall the religious opinions or affiliations of the faculty of the Academy be made a matter of examination or inquiry. Provided, however, that no instructors or professors in the Academy shall inculcate sectarian tenets in any of the teachings, nor attempt either directly or indirectly, under penalty of dismissal by the Philippine Merchant Marine Academy Board, to influence students or attendants at the Academy for or against, any particular church or religious sect.

SECTION 10. Professors and other regular instructors in the Academy shall be exempt as such from any civil service examinations or regulations as a requisite to appointment.

SECTION 11. There shall be a Secretary of the Academy appointed by the Philippine Merchant Marine Academy Board. He shall be the Secretary of the Board as well as the Academy, and shall keep such records of the Academy as may be designated by the Board.

SECTION 12. Graduates of the Philippine Merchant Marine Academy who are holders of a Bachelor of Science degree in Marine Transportation, major in Navigation and seamanship, shall be exempted from taking the third mate examination, and those who are holders or a Bachelor of Science degree in Marine Transportation, major in steam engine and electrical engineering, shall be exempted from taking the fourth steam engineers' examination.

SECTION 13. In order not to interrupt the smooth functioning of the present four-year nautical curriculum of the Philippine Nautical School, the present Superintendent and faculty, as well as the other personnel shall be absorbed by the new Academy. Salaries of these personnel shall be adjusted at the discretion of the Academy Board within the limits available for appropriation.

SECTION 14. For carrying out the purpose and provision of this Act, the sum of eight hundred thousand pesos is hereby appropriated for funds in the National Treasury not otherwise appropriated for the fiscal year nineteen hundred sixty-three to nineteen hundred
sixty-four. An additional five hundred thousand pesos is hereby appropriated for
the purpose of acquiring a modern steam-powered training ship to supplement
classroom instructions. Thereafter, the amount of three hundred thousand
pesos shall be included in the yearly General Appropriation Acts for the
maintenance and operation of the Philippine Merchant Marine Academy.

The sum herein appropriated shall not be released except upon certifica-
tion of the Secretary of Finance and Auditor General as to the availability of fund
in excess of those necessary for the operation of the Government as provided in
the Annual General Appropriation Act for the fiscal year nineteen hundred sixty
three to nineteen hundred sixty four.

SECTION 15. Any provisions of existing laws inconsistent with this Act
are hereby repealed.

SECTION 16. This Act shall take effect upon its approval.

Approved:

(SGD) FERDINAND E. MARCOS
President of the Senate

(SGD) CORNELIO T. VILLAREAL
Speaker of the House of
Representatives

Finally passed by the Senate on May 23, 1963

(SGD) REGINO S. EUSTAQUIO
Secretary of the Senate

This Act, which originated in the House of Representatives was finally passed
by the same on May 15, 1962.

(SGD) INOCENCIO B. PAREJA
Secretary of the House of
Representatives

APPROVED:

(SGD) DIOSDADO MACAPAGAL
President of the Philippines

A true Copy
/llg

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Composition of PMMA Board

CHAIRMAN

COL GENEROSO F. TANSECO
Administrator, Maritime Industry Authority

MEMBERS

CAPT. ELADIO TEVES
Chairman
Board for Deck Officers

CAPT. ROBERTO Q. MORENO III
Officer-in-Charge
Philippine Merchant Marine Academy

CAPT. DANTE GONZAGA, PN
Asst. Chief of Naval Staff
N-1 Philippine Navy

CAPT. JOAQUIN TOMAS
President
United Harbor Pilots Association of the Philippines, Inc.

MR. MIGUEL MAGSAYSAY
President
Filipino Shipowners' Asso.

CAPT. DOMINADOR VILLENA, PN
Chairman
Board of Marine Inquiry

HON. CRESCENCIO M. SIDDAYAO
Director
National Seamen Board

ENGR. RAMON DECEO
Chairman
Board for Engine Officers

CDR ROMULO A GUERRERO
Secretary of the Board
REPUBLIC ACT NO. 5173

AN ACT CREATING A PHILIPPINE COAST GUARD, PRESCRIBING ITS POWERS AND FUNCTIONS, APPROPRIATING THE NECESSARY FUNDS THEREFORE, AND FOR OTHER PURPOSES.

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

Section 1. Coast Guards: Objectives. - There is hereby created in the Philippine Navy a major unit to be known as Philippine Coast Guard which shall have the following general objectives:

(a) To enforce or assist in the enforcement of all applicable laws upon the high seas and waters subject to the jurisdiction of the Republic of the Philippines;

(b) To enforce laws, promulgate and administer regulations for the promotion of safety of life and property within the maritime jurisdiction of the Philippines; and

(c) To develop, establish, maintain and operate, with due regard to the requirements of national defense, aids to maritime navigation and rescue facilities for the promotion of safety on and over the high seas and waters, subject to the jurisdiction of the Philippines.

Section 2. Board of Visitors. - A Board of Visitors is created which shall have visitorial and policy-making powers to be composed of the Flag Officer-in-Command of the Philippine Navy, the Commissioner of the Bureau of Internal Revenue, the Commissioner of the Bureau of Customs, the Secretary of the Department of Foreign Affairs, the Commissioner of the Bureau of Immigration, the President of the Filipino Shipowners Association, and the Commandant, Philippine Coast Guard who will act as ex-officio member.

Section 3. Specific Functions. - The Philippine Coast Guard shall perform the following functions:

(a) To prevent and suppress illegal entry, smuggling, other customs frauds and violation of other maritime laws that may be committed within the waters subject to the jurisdiction of the Republic of the Philippines, and for this purpose surveillance by the Philippine Coast Guard may be made on vessels entering and/or leaving Philippine territory;

(b) To assist in the suppression of fishing by means of dynamite, explosives or toxic substances or other methods as may be declared destructive by the proper authorities;
(c) To promulgate and enforce rules for lights, signals, speed, steering, sailing, passing, anchorage, movement and towlines of vessels and lights and signals on bridges;

(d) To approve plans for the construction, repair, or alteration of vessels; approve materials, equipment and appliances of vessels; approve the classification of vessels; inspect vessels and their equipment and appliances; register all types of motorized watercraft plying in Philippines waters; issues certificates of inspection and of permits indicating the approval of vessels for operation; issue certificates of Philippine registry of vessels; administer load line requirements; promulgate and enforce other provisions for the safety of life and property on vessels: Provided, That certification and approval of any plans, equipment and any vessel by internationally known classification societies which are recognized by the Philippine Government shall be deemed to have complied with this section;

(e) To issue licenses and certificates to officers, pilots, major and minor patrons and seamen, as well as suspend and revoke such licenses and certificates;

(f) To investigate marine casualties and disasters including those arising from marine protests filed with the Bureau of Customs relative to the liability of shipowners and officers;

(g) To enforce laws, rules and regulations governing manning, citizenship and mustering and drilling of crew requirements, control of logbooks, shipment, discharge, protection and welfare of merchant seamen;

(h) To enforce laws requiring the performance of duties of shipowners and officers after accidents;

(i) To prescribe and enforce regulations for out-fitting and operation of motorboats and the licensing of motorboat operators;

(j) To regulate regattas and marine parades;

(k) To render aid to distressed persons or vessels on the high seas and on waters subject to the jurisdiction of the Philippines, and, in this connection, the Philippine Coast Guard may perform any and all acts necessary to rescue and aid persons, furnish clothing, food, lodging, medicine and other necessary supplies and services to persons succored; protect, save and take charge of all property saved from marine disasters until such property is delivered to persons authorized to receive it or is otherwise disposed of in accordance with law or applicable regulations; and collect and take charge of bodies of those who may perish in such disasters;

(l) To develop, establish, maintain, and operate aids to maritime navigation. In the performance of these functions, the Philippine Coast Guard is authorized to destroy or tow in port sunken or floating dangers to navigation;
(m) To supervise nautical schools with reference to activities relative to navigation, seamanship, marine engineering and other allied matters, in coordination with the Department of Education;

(n) To perform functions pertaining to maritime communications which are not specifically delegated to some other office or department; and:

(o) To assist, within its capabilities and upon request of the appropriate authorities other Government agencies in the performance of their functions, within the waters subject to the jurisdiction of the Philippines, relating to matters and activities not specifically mentioned in this section: Provided, That in the exercise of these functions personnel of the Philippine Coast Guard shall be deemed to be acting as agents of the particular department, bureau, office, agency or instrumentality charged with the enforcement and administration of the particular law. Members of the Philippine Coast Guard are peace officers for all purposes of this Act and shall be, and shall act, as law enforcement agents of the Bureau of Customs, and the Bureau of Immigration, the Bureau of Internal Revenue, the Fisheries Commission, and such other departments, bureaus or offices in the enforcement of pertinent laws, rules and regulations.

Section 4. Organization; Administration. - The Philippine Coast Guard shall be headed by a Commandant who shall be a Flag Officer. Subject to the approval of the Secretary of National Defense, the Flag Officer-In-Command, Philippine Navy, shall organize the Philippine Coast Guard into operational units or subordinate commands and equip the same as may be necessary for effective exercise of the functions and duties vested upon it by law, and shall promulgate rules and regulations necessary for its administration. The Philippine Coast Guard shall be administered and maintained as a separate unit of the Philippine Navy, and it shall be specially trained and equipped for the effective discharge of police duties at sea.

The Marine Safety Division, including the Naval Architecture and Engineering Section, the Maritime Safety Inspection Section, the Registration and Licensing Section, and the functions of the Hulls and Boilers Division, the Marine Board of Inquiry as existing in the Bureau of Customs, and all other agencies or instrumentalities of the Government presently performing any of the functions provided for in subparagraph (c) to (n), inclusive of Section three of this Act, are hereby transferred with their personnel, records, files, supplies, equipment, furniture, funds and other properties to the Philippine Coast Guard: Provided, That no person shall be deprived of his office, employment or rank, or suffer any diminution of his salary by operation of this Act. The Lighthouse Service of the Philippine Navy is, likewise transferred to the Philippine Coast Guard. Personnel transferred to the Philippine Coast Guard shall be continue to be governed by the Civil Service Law and other existing laws relating to their individual status, rights, emoluments and benefits.
Section 5. Unauthorized Aids to Maritime Navigation. - No person, association or corporation shall establish, erect, or maintain any aid to maritime navigation without first obtaining authorization from the Philippine Coast Guard in accordance with applicable regulations.

Section 6. Interference with Aids to Navigation. - It shall be unlawful for any person, association or corporation, to remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to maritime navigation.

Section 7. Penal Provisions. - Any person, association or corporation who violate any provision of this Act, or the rules and regulations made thereunder, shall upon conviction, be punished with a fine of not less than one hundred pesos nor more than five hundred pesos or by imprisonment of not less than thirty days nor more than six months or both: Provided, That, in case the violation is committed by an association or corporation, the penalty herein prescribed shall be imposed on the responsible officers or directors thereof: Provided, finally, That nothing in this Act shall prevent the Philippine Coast Guard from providing administrative penalties for violation of any regulation that it promulgates.

Section 8. Appropriation. - To carry out the purposes of this Act, there is hereby appropriated, out of any funds in the National Treasury not otherwise appropriated, the sum of fifteen million three hundred twenty-seven thousand five hundred pesos for the purchase of watercraft, personnel services, requirements for maintenance and other operating expenses: Provided, That sixty thousand pesos shall be used exclusively for the updating of the Philippine merchant marine regulations. To enable the Philippine Coast Guard to acquire the necessary vessel requirement to accomplish effectively its mission, the sum of nine million pesos each year for the first two years after the passage of this Act and thirteen million pesos each year for the succeeding three years shall be included in the annual General Appropriation Act.

Section 9. All laws, executive orders, rules and regulations and parts thereof inconsistent with this Act are hereby repealed.

Section 10. This Act shall take effect upon its approval.

Approved, August 4, 1967.

SIGNED
## 1997 Annual Training Accomplishment Report

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**Total**
Specialized Education 1 (Special Subjects Required of Administrative Officials of Maritime Safety)

Specialized Education 1 is a professional one required of the administrative officials in charge of maritime safety, centering around laws and subjects related to maritime safety administration. Its subjects are either required or elective. "Special research", which is among the required subjects and starts in the 6th semester, is for producing graduation thesis. Among elective subjects are seminar 1 (in the 2nd year) and seminar 2 (in the 3rd year). They are elective, but virtually all cadets join them.

Required:
- administrative law, civil law, commercial law,
- criminal law, criminal procedure 1, international law 1, maritime police law and administration,
- maritime criminal investigation, administrative management of maritime safety, marine environmental law, operations research, maritime safety engineering, search and rescue theory, meteorology, oceanography, introduction to aeronautics,
- introduction to naval architecture, special research

Elective:
- criminal procedure 2, international law 2,
- information engineering, exercise in information processing, decision-making theory, fundamentals of nautical science, introduction to communication system, radio regulations, seminar 1/2, English 3

Special Education 2 (Special Subjects Necessary for Seamanship)

Course 1 (navigation)

Required:
- geo-navigation, exercise in geo-navigation, celestial navigation, exercise in celestial navigation,
- electronic navigation, exercise in electronic navigation, electronic instruments 1/2, experiment in nautical instruments, seamanship 1/2, experiment in seamanship,
- ship safety engineering 1, maritime law, rescue engineering, experiment in rescue engineering,
- oceanography and meteorology 1, naval architecture 1/2,
- practice in naval architecture, electronic engineering
Course 2 (engineering)
Required:
strength of materials, engineering materials, mechanical technology, workshop practice, experiment in mechanical engineering, dynamics of machinery, machine design, exercise in machine design, drawing, control engineering, exercise in control engineering, steam turbines and boilers, exercise in steam turbines and boilers, internal combustion engines, auxiliary machinery, exercise in auxiliary machinery, fuel and lubricating oil, industrial thermodynamics, hydrodynamics, propulsion engineering, experiment in marine engineering, electric engineering, marine electrical equipment, marine electronic engineering, experiment in electric engineering, engine works

Course 3 (communications)
Required:
advanced calculus, electromagnetic theory, exercise in electromagnetic theory, electric circuits, exercise in electric circuits, physics of semiconductor, electronic devices, electronic circuits, exercise in electronic circuits, electronic instrumentation and measurement, applied instrumentation and measurement, microwave engineering, antennas, radio wave propagation, communication systems, experiment in communication systems, electronic navigation engineering, exercise 1/2 in communication engineering, exercise in radio regulations

Elective:
nautical instruments 3, ship safety engineering 2, oceanography and meteorology 2, naval architecture 3, ship hydrodynamics, applied radio engineering, mechanism, mechanical vibrations, heat transfer and fuel combustion engineering, electric engineering 2, applied electric engineering, system and control, information theory, computer science, applied mathematics

Training Subjects
Required:
gunnery 1/2, shooting, swimming, diving, first-aid methods, cutter training, visual signaling, control and restraining techniques, all-out command training, introduction to radio communication operation, radio communication operation, practice 1/2 in international communication, practice 1/2 in computer system
In accordance with the pertinent provisions of Republic Act (RA) No. 7722, otherwise known as the "Higher Education Act of 1994," and by virtue of Resolution No. 138-97 of the Commission en banc dated 22 October 1997, and for the purpose of rationalizing Maritime Education in the country with the end in view of keeping pace with the demands of global competitiveness, the following policies, standards and guidelines for maritime education are hereby adopted and promulgated by the Commission, thus:

ARTICLE I
AUTHORIZATION

SECTION 1. These Policies, Standards and Guidelines for Maritime Education shall apply to the following courses:

1.1. Bachelor of Science in Maritime Transportation (BSMT)
1.2. Bachelor of Science in Marine Engineering (BSMarE)

SECTION 2. These courses shall be operated only by institutions with proper authority granted by the COMMISSION ON HIGHER EDUCATION; and by the respective Board in case of chartered colleges and universities.

ARTICLE II
MISSION STATEMENT

SECTION 3. The Maritime Education program shall aim to produce graduates whose knowledge, skills and attitudes are sufficient to comply with the requirements of STCW 78 as amended in 1995 and such other international laws and conventions, commence and pursue a professional career or advanced studies in any maritime field of specialization.

SECTION 4. The Maritime Education program shall aim to equip the students with the knowledge of the trade, ethics and discipline necessary to the particular professional values and the national identity in general.
ARTICLE III
ADMINISTRATION

SECTION 5. There shall be an Office of Maritime Education headed by a full

time Superintendent/Dean to administer the maritime programs.

SECTION 6. The Superintendent/Dean of the Maritime Education courses must
possess relevant academic degrees, experiences and credentials as follows:

6.1. A master’s degree in any field with a bachelor’s degree relevant to the
maritime programs
6.2. Holder of a Management Level Certificate (at least a chief mate or second
engineer license)
6.3. Two (2) years teaching experience.

ARTICLE IV
FACULTY

SECTION 7. The Faculty members for General Education shall possess a
master’s degree and should teach only subjects of their specialization.

SECTION 8. Faculty members teaching 1st and 2nd Year maritime professional
subjects shall be holders of at least Operational Level Certificate (3rd mate or 4th
engineer license) with:

8.1. Bachelor’s degree in the particular field of specialization; and
8.2. At least 1 year of sea experience on his professional level;
8.3. Completed an appropriate training course for instructors.
8.4. Faculty members conducting subjects involving the use of simulators must
have received appropriate guidance in instructional techniques and have
gained practical operational experiences on the particular type of
simulators being used.

SECTION 9. Faculty members teaching 3rd Year maritime professional subjects
shall be holders of a Management Level Certificate with

9.1. Bachelor’s Degree in the particular field of specialization;
9.2. At least 1 year of sea experience on his professional level;
9.3. At least 2 years teaching experience;
9.4. Completed an appropriate training course for instructors
9.5. Faculty members conducting subjects involving the use of simulators must
have received appropriate guidance in instructional techniques and have
gained practical operational experiences on the particular type of
simulators being used.
SECTION 10. A faculty development program for professional advancement of the faculty members must be provided through any of the following:

10.1. Induction/orientation of new faculty
10.2. Scholarship/Fellowship Grants
10.3. Tuition Fee Supplement/Discount
10.4. In-Service Training

SECTION 11. As a general rule, the regular full-time load of a faculty is twenty-four (24) units per week. A faculty member with a very satisfactory teaching performance may be allowed to handle six (6) additional units per week provided subject preparation is limited to two.

SECTION 12. There shall be a faculty manual containing information and policies on:

12.1. Hiring, retention, promotion and separation
12.2. Functions and responsibilities
12.3. Ranking system
12.4. Evaluation
12.5. Salary rates
12.6. Faculty benefits
12.7. Code of conduct/ethics

SECTION 13. Faculty-Student Ratio - For effective teaching-learning the following faculty-student ratio per class shall not be more than:

13.1 Class 1:50
13.2 Laboratory 1:25

ARTICLE V
CURRICULUM

SECTION 14. The minimum credit units consist of 165 units for Bachelor of Science in Marine Transportation (BSMT) and 190 units for Bachelor of Science in Marine Engineering (BSMarE).

SECTION 15. Annex 1 contains the prescribed curricular structure and description of the various subjects, which are made an integral part of these policies and standards. The institution may enrich the curriculum or modify the structure depending on the needs of the students and industry, provided that all prescribed subjects are offered and pre-requisites are observed.
SECTION 16. The basic safety courses (Fire Prevention and Fire Fighting, Elementary First Aid, Personal Survival Techniques and Personal Safety and Social Responsibilities) are hereby incorporated in the curriculum and as such shall appear in the transcript of records.

SECTION 17. The Basic Seaman’s Course shall not be accredited in the B.S. Maritime programs.

ARTICLE VI
ADMINISTRATIVE AND PHYSICAL FACILITIES

SECTION 18. Every Maritime School shall maintain in their files updated copies of the following:

18.1 Articles of incorporation and by-laws
18.2 Certificate of title of the school site
18.3 Documents of ownership of the (additional) school building
18.4 Pictures of school/building/classroom/lab/shop, etc.
18.5 Proposed budget for the succeeding school year
18.6 Copy of the latest financial statement
18.7 Certificate of recognition/permit of the course/s.
18.8 Curriculum
18.9 School bond
18.10 Statistics of performance in board exam
18.11 Copy of the retirement plan of the school
18.12 Organizational and personnel chart
18.13 List and curriculum vitae of school administrators, academic teaching and non-teaching staff
18.14 List of laboratory facilities, equipment, materials
18.15 School prospectus
18.16 Statistics on enrollment and graduates for the last 5 years
18.17 Safety occupancy permit
18.18 Fire and/or disaster plan
18.19 Class and teachers program for the current school year

SECTION 19. Maritime schools shall preferably be established in proximity to a body of water and shall own its site and buildings that shall conform with CHED standards, building code and city/provincial ordinances. However, maritime schools not owning their present site/building shall comply with the ownership requirement four (4) years from the date of approval of these policies, standards and guidelines.
SECTION 20. The school site and building shall be equipped with adequate equipment, safety measures, and procedures in the following:

20.1 Fire escape
20.2 Fire alarm systems
20.3 Campus security force

SECTION 21. Site/Building/Room Requirements

21.1 School site/lot
21.2 Athletic field and/or gymnasium
21.3 Administrative bldg. (Gen. or Executive Office, Registrar, Accounting, ROTC, Guidance/Placement office)
21.4 Medical and dental clinic
21.5 Toilets
21.6 Canteen/cafeteria
21.7 Faculty room
21.8 Student lounge
21.9 Library room
21.10 Tool room and machine shop
21.11 Mock bridge for navigation and seamanship room
21.12 Computer laboratory room
21.13 Chemistry laboratory room
21.14 Physics laboratory room
21.15 Basic safety courses laboratory room

SECTION 22. Classroom. The standard classroom should at least be 7 x 8 square meters for a class of 50 students. Classrooms must be well-lit and well-ventilated. They should contain the necessary equipment and furniture like chairs, instructor's podium, blackboards/white boards, etc.

SECTION 23. Laboratory. The laboratory rooms should allow a space of 2 square meters per student. They should be well-ventilated and well-lit, contain the specific laboratory equipment and must be provided with adequate water supply.

SECTION 24. Audiovisual facilities. As a general rule, the institution should provide the necessary audiovisual equipment in support of the teaching-learning process such as video/overhead/slide projector, sound system, LCD projectors, screens, etc.
ARTICLE VII
LABORATORY TRAINING EQUIPMENT

SECTION 25. There shall be sufficient and appropriate working equipment apparatus, supplies, tools and other materials for laboratory experiments and practical exercises as contained in Annex II which are made an integral part of these policies and standards.

SECTION 26. Machinery, equipment and apparatus shall be maintained in good working condition. In addition, materials, supplies and accessories shall always be readily available for laboratory practices or exercises of students and faculty.

ARTICLE VIII
LIBRARY

SECTION 27. Every maritime school shall have a library with professional library staff, and books and publications which in terms of quality and quantity are reasonably adequate for effective maritime studies.

SECTION 28. Library holdings. The library holdings shall meet the following requirements:

28.1 Professional books - At least five (5) titles per professional subject
28.2 General education and cultural books - At least ten (10) titles per subject
28.3 Encyclopedia - At least one (1) set
28.4 Magazines and publications - Subscriptions to at least five (5) professional/international publications current to the year
28.5 One volume each for every 20 students enrolled in the particular year/subject
28.6 The library holdings must be of current editions.
28.7 STCW '95 manuals and other international laws and conventions

SECTION 29. A professional librarian must head the library. The number of librarians shall be based on enrollment as follows:

<table>
<thead>
<tr>
<th>Enrollment</th>
<th>Librarian Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 - 1000 Students</td>
<td>1 full-time Librarian</td>
</tr>
<tr>
<td>1001 - 5000 Students</td>
<td>2 full-time Librarians</td>
</tr>
<tr>
<td>5001 or over</td>
<td>3 full-time Librarians</td>
</tr>
</tbody>
</table>
ARTICLE IX
SHIPBOARD TRAINING AND FIELD TRIP

SECTION 30. Each institution shall provide a program for field trips to vessels, ports and shipyards and other allied educational opportunities for maritime students.

SECTION 31. The institution shall have a Shipboard Training Office headed by a Certified Marine Officer with at least 1-year shipboard experience on his Certificate. This Office shall be responsible for the administration and coordination of activities and requirements of students who will undergo shipboard training. Among other things, the Shipboard Training Office shall:

31.1 Facilitates embarkation of cadets
31.2 Monitors and in cooperation with the shipowner/operator evaluate performance of cadets while on board.
31.3 Conducts briefing and debriefing of cadets before and after apprenticeship training, respectively, in terms of training record book
31.4 Assists graduates for placement
31.5 Keeps an updated record of graduates.

ARTICLE X
RESEARCH AND DEVELOPMENT PROGRAM

SECTION 32. - Every maritime school shall encourage their faculty members and students to undertake research for the enhancement of maritime education programs and training.

ARTICLE XI
EXTENSION SERVICES

SECTION 33. - Every maritime school shall have extension services relevant to the maritime industry.
ARTICLE XII
ADMISSION, SELECTION AND RETENTION OF STUDENTS

SECTION 34. - Maritime institutions shall observe the following admission and selection criteria:

34.1 Student general admission requirements:

34.1.1 Medically-fit
34.1.2 Pass eyesight and hearing examination as prescribed by the Administration

34.2 Retention of students - The school shall adopt its own admission (in addition to the general admission requirements) and retention policies to ensure achievement of the program objectives.

ARTICLE XIII
QUALITY STANDARDS SYSTEM (QSS)

SECTION 35. Every maritime school shall develop and implement a quality standard system in accordance with the provisions of these policies, standards and guidelines.

SECTION 36. Recognizing that Filipino Seafarers shall be globally competitive, in compliance with the 1995 amendments to STCW 78 and other international laws and conventions, the school facilities, equipment and teaching competencies shall be upgraded to meet the quality standards.

ARTICLE XIV
REPEALING CLAUSE

SECTION 37. Repeal. - Any and all administrative issuances which are contrary to or inconsistent with any of the provisions herein are hereby deemed automatically repealed, rescinded and/or modified accordingly.

(This Appendix is extracted from the CHED CMO Series of 1997)
Appendix 7

CAREER PATH OF FILIPINO MARINE OFFICERS AND RATINGS

CHIEF RADIO OFFICERS
  \rightarrow\text{RADIO OFFICERS}
    \rightarrow\text{ASST. RADIO OFFICER}

MASTER MARINER
  \uparrow\text{LICENSURE EXAMINATION}
  2 YEAR SEA SERVICE

CHIEF MATE
  \uparrow\text{LICENSURE EXAMINATION}
  1 YEAR SEA SERVICE

2ND MATE
  \uparrow\text{LICENSURE EXAMINATION}
  1 YEAR SEA SERVICE

3RD MATE

DECK RATINGS

ENGINE RATINGS

ONE YEAR APPRENTICESHIP ONBOARD

DECK TRAINEES

DECK CADETS

ENGINE CADETS

ENGINE TRAINEES

BASIC MERCHANTABILITY MARINE COURSE

BSMT

BS MAR - E

ENTRY POINT