

Comparative Review of Maritime Transportation Education between Korea and the Philippines

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한국과 필리핀의 해기교육에 관한 고찰

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Abstract : This paper compares the maritime education of two traditional maritime countries, Korea and the Philippines, specifically, in their maritime transportation education. The subjects of this review focus on Mokpo National Maritime University(MMU) and the Philippine Merchant Marine Academy(PMMA). The paper presents the curricular and training programs of both institutions and shows the differences in the curriculum designs and methodology of delivery as contained in the requirements of Standards of Training, Certification and Watchkeeping 1978, as amended in 1995(STCW 95). It also illustrates the social climate of the two countries and the attitude of maritime community in relation with the maritime programs offered by the institutions towards the quality of the competent maritime graduates.

Key Words : Maritime education, Training programs, Requirement of STCW 95, Curriculum, MMU, PMMA

요 약 : 이 논문은 전통적인 해기국가인 한국과 필리핀에 있어서 해기교육 중 해상운송교육에 대해서 조사하여 상호 비교한다. 두 국가의 교육기관인 목포해양대학교와 필리핀해양대학을 대상으로 하여 검토하였다. 양 교육기관의 교과과정과 교육훈련프로그램 및 STCW의 교육훈련과 당직기준의 요구사항을 포함한 교과과정과 교육체계의 차이점에 대해 비교 검토한다. 해기교육의 품질을 향상시키기 위하여 양 교육기관에서 실행되어야 할 바람직한 해기교육프로그램, 해사관련업계의 발전방향에 대하여 제안한다.

핵심용어 : 해사교육, 훈련프로그램, STCW, 교과과정, 목포해양대학교, 필리핀해양대학

1. Introduction

Maritime Education and Training(MET) has been the IMO's thrust in enhancing maritime development through the International Convention on Standards of Training, Certification and Watchkeeping, 1978(STCW Convention), as amended in 1995. In the whole, it demonstrates the pedagogical approach and strategies that maritime institutions introduce to address the current issues affecting the industry.

Firstly, the paper demonstrates the prevailing social condition in the region. It discusses the economic situation and the side effects it has brought upon on the maritime

industry.

It offers an analysis of the maritime climate that prevails in both countries in terms of maritime environment. This outlook combines the industry's attitude with the institutions' approach to the maritime education.

It focuses on the design of instruction in the field of maritime transportation between the two countries by using Mokpo National Maritime University in Korea and the Philippine Merchant Marine Academy as models.

Similarly, this paper shows the curricular programs and teaching strategies of the two maritime institutions, and how they address the present conditions prevailing in each country's maritime environment. By using flowcharts, it, also, describes the stages of academic and training phases in both institutions.

In conclusion, the paper illustrates that varying local,

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regional and global conditions continues to link the two traditional maritime countries to one common goal: of giving the maritime community the most competent human and system resources to serve the industry despite of the differing methodologies and social climate.

2. The maritime environment

The East Asian region is at the center of global maritime activities. Korea and the Philippines, with their diverse economies, place the region in the locus of this environment.

Maritime commerce thrives greatly in this region, propelled by globalization as well, makes it a lucrative center for management and operation in the shipping business. Technology, easy access to communication, and being a major source of global trading, likewise, spawned a

new breed of maritime professionals that invite a similar strategic approach to their intellectual development in the institution level.

The southern part of this region is also the hub of manpower supply. The Philippines is the leading supplier of seafarers to the world fleet for some time now.

However, the disparity of economies between the two countries reflects the attitude of its maritime community to their human resource. This attitude has impacted greatly with the mode of education that the maritime institutions are providing to their students.

Table 1 below shows the current maritime climate between the industry and the academia of the two countries. It presents strengths, weaknesses and the opportunities as well as the envisioned threats that prevail between the two countries. It is not comprehensive, but it shows the general structure of the present shipping situation in the region.

Table 1. Comparative SWOT analysis between the maritime industry and curricular programs of the maritime institutions

KOREA	PHILIPPINES
Strengths	
<ul style="list-style-type: none"> ·Strong economy ·Boom in shipbuilding and shipping ·Strong maritime commerce / trade ·STCW 95 compliant ·Advance facilities: simulators, training ships, laboratories, etc ·Solid foundation in academic curricular programs ·Disciplined and competent graduates 	<ul style="list-style-type: none"> ·Numerous maritime educational institutions ·Strong demand for sea-based manpower supply ·Adequate communication skills ·Lower cost of ship operation due to low salaries ·Modern facilities: simulators, laboratories ·Solid foundation in academic curricular programs ·Disciplined and competent graduates ·STCW 95 compliant
Weaknesses	
<ul style="list-style-type: none"> ·Reluctance of fresh graduates to serve onboard merchant ships on long-term basis ·Biased attitude of local shipping companies on gender-related recruiting policies ·English language inadequacy ·High ship operation cost due to high salary for sea-based labor 	<ul style="list-style-type: none"> ·Sluggish economy ·Lack of shore-based jobs in shipping operations relative to vast human resource ·Pro-sea based curricular programs
Opportunities	
<ul style="list-style-type: none"> ·Enhance curricular programs on: <ul style="list-style-type: none"> o shore-based (management) o sea-based (ship operation) ·Involvement of industry in educational process ·Adequate supply of competent shore & ship managers ·Regional & global reach in shipping operation 	<ul style="list-style-type: none"> ·Higher investment from foreign shipping companies and organizations ·Plethora of skilled & sea-experienced manpower for shore-based job.
Threats	
<ul style="list-style-type: none"> ·Shortage of sea-based manpower ·Lack of sea experience for shore-based shipping operation 	<ul style="list-style-type: none"> ·Proliferation of maritime schools & training centers ·Erosion of quality in maritime education ·Increasing salary demands

The comparison is evident by their effects to the industry on its human resource and to the maritime educational institutions that provide their foundations

Table 1 illustrates the general situation between Korea and the Philippines. It shows that their strengths, sometimes, are also the source of their weaknesses. However, it also offers a window of opportunities that can be enhanced to eliminate or reduce the effects of the threats and the weaknesses(MMU, 2008).

The two countries are in paradox. Their economy is very much diverse. They do not compete in any aspect of the business and even complement each other, where Korea expands its shipbuilding infrastructures and other shore operations to the Philippines as well. Their only similarity is that their maritime education complies with the minimum standard set by the STCW Code, but the emphasis of delivery lies on the dictates of the maritime market domestic and international.

Herein comes the source of its human element, the maritime academia. It is said that however good and well equipped a ship is, it is still sub-standard if the crew is not competent to run it(Pasamba, 2008).

There are only two maritime universities in Korea: Mokpo National Maritime University and Korea Maritime University; while the Philippines has 91 institutions that offer baccalaureate degrees in maritime education(POEA, 2006). Only the PMMA is the public maritime institution supported by the government.

3. Curriculum design and delivery

As it was stated in section 2, the only commonality of the subject institutions, MMU and PMMA, is that both are STCW Code compliant. However, like a "runway", the curriculum designs of both institutions run their courses in similar goals, that of a global context, but of varied grounds, and that is dictated mostly of domestic social needs of the industry.

In order to realize Safer Shipping and Cleaner Ocean, which is the mission of all the people in maritime circle, the importance of maritime education and training is highly recognized. The ultimate goal of MET is to supply responsible and well-educated licensed seafarers who are certified to be compliant with the international regulations and requirements(Gao Deyi, 2005).

With this goal or direction determined, the next step, obviously, is one of ways and means and among these, the

curriculum demands priority.

In Table 2 shows that the Korean MET is designed with the futuristic idea in mind. Its curriculum is designed in a two-pronged approach: the first gives a student a choice to study ship's operation and navigation, and becomes future merchant ship officer while the second is designed for shore-based management. Subjects are homogenously grouped in five different majors that the students can choose from dependent of the area of expertise they wish to pursue. There is an array of elective subjects to strengthen the formulation of knowledge with the ultimate goal of preparing the students into ship and shore based career(MMU, 2002; MMU, 2004).

The Philippine model shows in Table 3 is set on a prescribed set of curriculum wherein fewer electives are offered which makes it more pro-sea based.

The subjects are packaged together that a cadet must complete to attain a baccalaureate degree in marine transportation(CMO, 2000). It may seem too static, whereas the call of the times, technology and automation considering, should be dynamic. However, the maritime social structure in the country constrains the pursuance of shore-based career.

Instead of fitting the curriculum to the cadets, the Academy and the Philippine MET as a whole, fit the cadets to the curriculum. Hence, the maritime education formula leans more on developing skills onboard which is the call of the STCW. It follows more on the pedagogic approach that "learning-how", which is competence-based, is more important as "learning-that", which is rule-based. Onboard skills are emphasized and the test of time proved that this strategy serve well in the Philippine setting.

Table 2. Comparative matrix of curriculum Korea(MMU) model

1st Year(Freshman)		1st Semester		
Descriptive Title		Credit	Hrs	
Common / General Subjects	Compulsory	Introduction to Law	2	2
		Sports and Health	2	2
		History of the World	2	2
	Elective	Modern Philosophy and Ethics	2	2
		Korean History	2	2
		Economics	2	2
		TOEIC	2	2
Common / Basic Subjects	Compulsory	Philosophy	2	2
		Sea Law	2	2
		Computer Science	2	2
		Electronics and Elect	3	3

Major / Navigation Subjects	Compulsory	Safety & Emergency Procedures	3	3
		Ship Structure and Maintenance	3	3
Common General Subjects	Compulsory	Physics	2	2
		English Conversation	2	2
		Mathematics	2	2
	Elective	Literature	2	2
		Japanese	2	2
Chinese	2	2		
1st Year(Freshman)		2nd Semester		
Common Basic Subjects	Compulsory	Basic Safety Training	1	2
Major / Navigation Subjects	Compulsory	Geo-Navigation	3	3
		Navigational Instruments	3	3
		Radio Communication	3	3
		Radar Navigation	3	3
		Watchkeeping	3	3
2nd Year(Sophomore)		1st Semester		
Common / Basic	Compulsory	Shipping Practice	3	3
Major / Navigation Subjects	Compulsory	Cargo Operation and Stability	3	3
		International Maritime Organization	2	2
		Celestial Navigation	2	2
		Ship's Maneuvering & Handling	2	2
	Elective	Utility Mechanics for Navigation	3	3
Major / Nautical Science Subjects	Compulsory	Introduction to Nautical Science	3	3
		Aids to Navigation	3	3
	Elective	Advance Navigational Instruments	3	3
		Computer Engineering	3	3
		Digital Signal Processing	3	3
Programming Language	3	3		
Marine Safety System	Compulsory	Advance Marine Safety	3	3
	Elective	Physical Oceanography	3	3
		Industrial Mathematics	3	3
Marine Information System	Compulsory	Computer Structure	3	3
		Programming Language	3	3
	Elective	Computer Operating System	3	3
		Logic Circuit	3	3
		Aids to Navigation	3	3
Digital Signal Processing	3	3		
International	Compulsory	Logistics Management	3	3

Logistics	Elective	Practical Business of Trade	3	3
		Law of Logistics	2	2
		Logistics Information System	3	3
Marine Police	Compulsory	Constitutional Law	3	3
		Civil Law	3	3
	Elective	Safety at Sea	3	3
		Study on Administration	3	3
		Administrative Law	3	3
Practical Business of Trade	3	3		
2nd Year(Sophomore)		2nd Semester		
Common / Basic	Compulsory	International Maritime Convention	2	2
		Maritime English	3	3
Major / Navigation Subjects	Compulsory	English Radio Communication	2	2
		Electronic Navigation	2	2
	Elective	Specialized Vessels	2	2
		Marine Insurance	3	3
Major / Nautical Science Subjects	Compulsory	Aids to Navigation	3	3
	Elective	Electronic Instruments	3	3
		Navigational Mathematics	3	3
Marine Safety System	Compulsory	Prevention & Control of Marine Pollution	3	3
		Naval Architecture	3	3
	Elective	Fluid Mechanics	3	3
		Maneuvering & Handling of Large Ships	3	3
		Marine Environment	3	3
Marine Information System	Compulsory	Discrete Mathematic	3	3
	Elective	Programming Language	3	3
		Data Structure	3	3
		Logic Circuit Practice	2	3
		Micro-processors	3	3
International Logistics	Compulsory	Intermodal Transport	3	3
		Introduction to Trade Theory	3	3
	Elective	Chartering	2	2
		Organizational Management	3	3
		Fundamentals of Management	3	3
Marine Police	Compulsory	Criminal Law	3	3
		Maritime International Law	3	3
	Elective	Search and Rescue	3	3
		Practice of Salvage	3	3
		Police Law	3	3

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		Prevention & Control of Maritime Pollution	3	3
4th Year(Senior)		1st Semester		
Common / Basic	Compulsory	Ship Medical Aid	1	2
	Elective	Technical English 2	1	2
Major / Navigation Subjects	Compulsory	Ship Handling Simulation	1	2
		Total Navigation System	2	2
	Elective	Traffic Control at Sea	3	3
		Shipping Management	3	3
		Advance Safety Training	1	1
Major / Nautical Science Subjects	Compulsory	Navigational Instruments Practice	3	3
		Elective	Navigational Simulation Development	3
	Fairway Design		3	3
Marine Safety System	Compulsory	Search and Rescue	3	3
		Ship's Movements	3	3
	Elective	Protection of Marine Casualty	3	3
		Dangerous Goods Management	3	3
		Ship's Structures	3	3
Marine Information System	Compulsory	Data Communication & Computer Network	3	3
		Elective	System Analysis and Design	3
	Communication Theory		3	3
	Intro to Artificial Intelligence Safety Management	3	3	
International Logistics	Compulsory	Shipping Management	3	3
		Port Administration	3	3
	Elective	Maritime Commercial Law	3	3
		Shipping Economics	3	3
		Trading English	3	3
		Dangerous Goods Management	3	3
		Shipping Economics	3	3
Marine Police	Compulsory	Criminal Procedures Law	3	3
		Admiralty Law	3	3
	Elective	Maritime Commercial Law	3	3
		Trading English	3	3
		Dangerous Goods Management	3	3
		Shipping Economics	3	3
4th Year(Senior)		2nd Semester		
Common / Basic	Compulsory	Marine Meteorology	2	2
	Elective	Technical English 1	1	2

Major / Navigation Subjects	Compulsory	Ship Power Plant	2	2
		Maritime Commercial Practice	3	3
	Elective	Specialized Vessel	2	2
		Port State Control	3	3
Major / Nautical Science Subjects	Compulsory	Safety Quality System	3	3
		VDR Analysis	3	3
	Elective	Ocean Surveying	3	3
		Civil Engineering	3	3
		Ocean Geometry Information System	3	3
		Marine Traffic Facility	3	3
		Radio Wave Engineering	3	3
		MARPOL	3	3
Marine Safety System	Compulsory	Safety Management	3	3
		Elective	Ship Management	3
	Sea keeping Performance		3	3
	Marine Ecology	3	3	
Marine Information System	Compulsory	Marine Info Communication System	3	3
		Web Programming	3	3
	Elective	Computer Graphics	3	3
		Database	3	3
		Microwave Engineering	3	3
		International Marketing	3	3
International Logistics	Compulsory	Introduction to Management	3	3
		Operational Research	3	3
	Elective	International Logistics System	3	3
		Accountancy	3	3
		Maritime Police	3	3
Marine Police	Compulsory	Vessel Inspection	3	3
		Civil Procedure Law	3	3
	Elective	Criminal Procedure Law	3	3
		International Law	3	3
		International MARPOL	3	3

In the 3rd Year(Junior), Table 2, MMU cadets are sent to their sea-phase practical training assignment either onboard the university training ships or onto Korean commercial vessels(MMU, 2008).

In the PMMA setting, Table 3, the cadets are fielded onto their 2nd class year(3rd Year) to various foreign commercial vessels which have agreements with the PMMA.

(See the flow-charts in Teaching Strategies - Section 4)

Table 3. Comparative matrix of curriculum Philippines (PMMA) model

1st Year(4th Class)		1st Semester		
Module	Descriptive Title	Lec	Lab	Unit
Seam 1	Ships and Ship's Routines	2	3	3
Safety 1	Basic Safety	2	3	3
Math 1	College Algebra	3	0	3
Physics 1	Physics 1	3	3	4
English 1	Grammar and Composition	3	0	3
Computer	Basic Computer Operation	2	3	3
Filipino 1	Sining ng Pakikipagtalastasan	3	0	3
Social Sci 1	Philippine History and Constitution	3	0	3
PE 1	Basic Swimming		2	2
	35/27	21	14	27
Nav Sci 11	Basic Course ROTC	4	0	1.5
Aptitude of Service	Leadership			1
	Discipline			1
1st Year(4th Class)		2nd Semester		
Module	Descriptive Title	Lec	Lab	Unit
DWatch 1	Deck Watchkeeping	3	0	3
Nav 1	Terrestrial Navigation 1	3	3	4
Math 2	Plane & Spherical Trigonometry	5	0	5
Physics 2	Physics 2	3	3	4
English 2	Grammar and Composition with Maritime English and Vocabulary	3	0	3
Filipino 2	Pagbasa at Pagsusulat sa Ibat-ibang Disiplina	3	0	3
Chemistry	General Chemistry	3	3	4
PE 2	Swimming		2	2
	34/28	23	11	28
Nav Sci 12	Basic Course ROTC	4	0	1.5
Aptitude of Service	Leadership			1
	Discipline			1
2nd Year(3rd Class)		1st Semester		
Module	Descriptive Title	Lec	Lab	Unit
DWatch 2	Collision Regulations	3	3	4
Nav 2	Terrestrial Navigation 2	3	3	4
Nav 3	Celestial Navigation 1	3	3	4
Seam 2	Cargo Handling and Stowage: Non-Dangerous Cargo	2	0	2
Seam 3	Cargo Handling and Stowage: Dangerous Cargo	3	0	3
English 3	Technical Writing	3	0	3
Met Ocean	Meteorology and Oceanography	2	0	2
Math 3	Solid Measuring	3	0	3
PE 3	Team Sports	0	2	2
	33/27	22	11	27
Nav Sci 21	Advance Course ROTC	4	0	1.5
Aptitude of Service	Leadership			1
	Discipline			1
2nd Year(3rd Class)		2nd Semester		
Module	Descriptive Title	Lec	Lab	Unit

Enav 1	Electronic Navigation: RADAR, ARPA,	3	6	5
MERSAR	Merchant Ship Search and Rescue	3	3	4
Nav 4	Celestial Navigation 2	3	3	4
Seam 4	Basic Stability and Construction	2	3	3
English 4	Personality Development: Speech Improvement and Public Speaking	3	0	3
Soci Sci 2	General Psychology with Alcohol and Drug Prevention, STD, HIV and Aids Prevention	3	0	3
PE 4	Individual and Dual Sports	0	2	2
PSEA	Pre-shipboard Evaluation & Assessment	0	3	3
	34/24	17	17	24
Nav Sci 22	Advance Course ROTC	4	0	1.5
Aptitude of Service	Leadership			1
	Discipline			1
4th Year(1st Class)		1st Semester		
Module	Descriptive Title	Lec	Lab	Unit
MPP	Basic Marine Engineering	3	0	3
Ship Business 1	Introduction to Ship Business	3	0	3
E-Nav 2	Electronic Navigational Equipment: ECDIS, AIS, GPS, Gyro.	2	6	4
MarLaw	Maritime Law	3	0	3
Seam 5	Stability and Trim	3	3	4
Humanities	World Geography	3	0	3
	31/23	19	12	23
Nav Sci 41	Advance Course ROTC	4	0	2
Aptitude of Service	Leadership			1
	Discipline			1
4th Year(1st Class)		2nd Semester		
Module	Descriptive Title	Lec	Lab	Unit
MarCom	Radio Communication: INMARSAT & GMDSS	3	6	5
MARPOL	Marine Pollution & Prevention	3	0	3
Persman	Shipboard Personnel Management	3	0	3
Ship Business 2	Ship Management	3	0	3
Seam 6	Ship-handling & Maneuvering	2	3	3
Soc Sci 3	Life & Works of Rizal	3	0	3
CEA	Comprehensive Evaluation & Assessment	0	3	0
	26/20	17	9	20
Nav Sci 42	Advance Course ROTC	4	0	2
Aptitude of Service	Leadership			1
	Discipline			1

In the above matrix of curriculum, Table 2 and Table 3, it can be readily seen that the MMU model has the most of electives subjects that a student can choose from to pursue a major he/she wishes to take. Most of the

electives are tools for shore management career path. The five major subjects: nautical science; marine safety system; marine information system; international logistics and the maritime police have the common major subjects that each has to take regardless of which major one chooses, and that is the navigation subjects. It is also evident that technology computer and technology are emphasized in the offered elective subjects(MMU, 2004).

The PMMA model, however, is leaned and offered fewer subjects that are more pro-sea based. The emphasis is on the STCW and practicum mode of delivery is enhanced. It also focuses on the aptitude of service wherein cadets are trained on their leadership development(PMMA, 2007).

Both curriculums make use of simulators and laboratories as their teaching aids.

4. Teaching strategies

4.1 The Korean setting

The Korean MET is monitored by the government for compliance in the international standards of STCW 95 Codes and Conventions. A committee composed of experts in the maritime academy, the maritime industry and government agencies regularly audit the two maritime universities and other training institutions for compliance with the local rules and the international maritime regulations(MMU, 2008).

4.2 The MMU flowchart

Fig. 1 illustrates the systematic strategy of its educational system. It shows the flow of activities from the applicant's entry into the university until he/she attains the baccalaureate degree.

On the initial stages, the applicants are already undergoing the orientation course which will introduce them to campus life. Strict regulated life is enforced while the student is in-housed in the university campus dormitory to instill discipline and leadership traits. This helps them overcome in the rigors of sea-life.

After the two and half terms of academic instruction, the student goes into the sea-phase training. The university has adopted a system wherein about half of the total cadets in the junior year will be trained onboard the university training ships(T/S Sae Yudal or T/S Sae Nuri) for one semester and continue on to commercial ship (onboard Korean ship) for another semester to complete the one-year sea-training required by STCW code. The other

half of the junior year cadets will do the opposite way: from 2nd academic instruction, they will board direct commercial ships for six months and complete the remaining sea-phase practicum onboard the training ships. These system applies to all maritime cadets, except for those whose major is in Maritime Police, wherein the whole of their sea-phase duty is carried-out onboard the training ships alternating 6 months - 6 months between the two training ships.

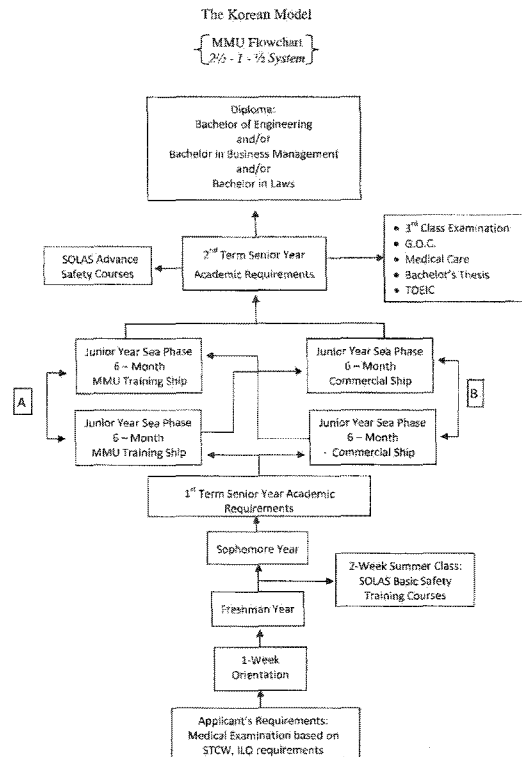


Fig. 1. The flowchart of MMU MET.

In the final phase of their education, the students shall complete their remaining half term of senior year academic instruction where they will be in-housed again in the campus dormitory(MMU, 2008).

On satisfactory completion of the 158 credit units of the academic, sea-phase and other requirements, the university confers the Bachelor's Degree to the student in the major course he/she has pursued. For those who majored in International Logistics, they are given the dual degree of bachelor of engineering and bachelor in business management; the students who pursued the Maritime Police Science shall also be conferred with the same dual degree of bachelor of engineering and bachelor in law. However, the students whose second major in Nautical Science, Marine Information System and Marine Safety System shall be given the lone degree of bachelor of engineering(MMU, 2002).

4.3 The Philippine setting

The Philippine MET is, likewise, strictly monitored by the government agencies, CHED(Commission on Higher Education) and MTC(Maritime Training Council). There are other international agencies that visit selected maritime institutions: the European Union representative in maritime affairs and DNV(Det Norske Veritas). Being the one public maritime school, the PMMA is always on its roster of inspection(MTC, 1998; MTC, 2005).

The Philippine MET in the maritime transportation have two systems: the "2-1-1 system" , Fig. 2, and the "3-1 system". In the former, which PMMA is the pioneer, there are initially two years of academic instructions, followed by the one-year shipboard training and completed by the senior year of academic instructions. Another institution follows the PMMA system but the rest of the private schools that offer BSMT(Bachelor of Science in Marine Transportation) adapt the "3-1 system". In this system, there is a continuous academic instructions for three straight years and complemented at the fourth year by one year shipboard training to gain the baccalaureate degree.

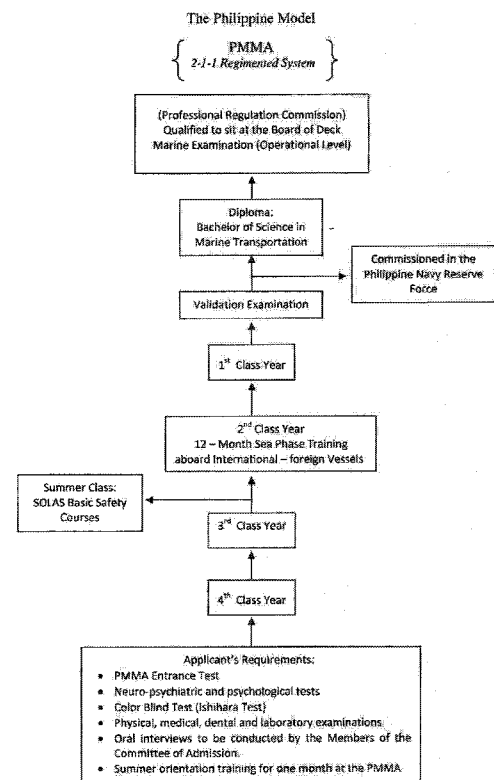


Fig. 2. The flowchart of Philippine MET.

4.4 The PMMA flowchart

Using the PMMA flowchart(2-1-1 system), Fig. 2, it is evident that it is more linear than the MMU model. The applicant must satisfy all the requirements before he can be accepted as midshipman/midshipwoman of the Academy.

The Summer Orientation training is a one-month indoctrination course where probationary midshipmen are quartered at the PMMA compound during the entire duration of the period. The "probies" are isolated from their families and friends and prohibited from entertaining visitors. A hectic schedule consisting of military training, refresher course in Mathematics, Science and English and introductory lectures in Navigation or Marine Engineering makes up the day of every "proby".

The summer orientation training is an important phase of the PMMA selection process because at this period the process of affecting the change in their behavior starts. The change in behavior towards making a seafarer out of a "landlubber". More precisely, the orientation period is the start of making a confident, highly-trained, and cultured future merchant marine officer/engineer or naval officers.

An applicant after passing the rigid requirements of the Orientation and Indoctrination Period, and having fully accomplished all necessary papers for registration, will be sworn in as a midshipman of the Philippine Merchant Marine Academy.

The campus life is strictly regimented. There is a cadet's organization, the Corps of Midshipmen, functioning in the concept that cadets run their own affairs with minimal supervision from their tactical officers. The academy's rules and regulations are strictly followed and Honor Code system is religiously observed. The stages of educational level is by Class system. The freshmen are called 4th class midshipmen; the sophomore are the 3rd class; and 1st class midshipmen are graduating cadets.

After completing the academic requirements at the 4th and 3rd class years, the cadets are dispatched on their third year to their assigned shipping companies who choose them according to each company's selection standards in concert with PMMA rules. These companies are mostly engaged in international trade and introduce the cadets in their "Cadet's Program" at the early stage of PMMA training to instill in them each company's standards garnering the values of loyalty and motivation.

On completion of their 12-month shipboard training, the cadets must return to the academy for the last year of their academic instruction.

To graduate and before being conferred the degree of Bachelor of Science in Marine Transportation, each cadet

must pass the validating test which covers the STCW examination syllabus for operational level. This is done inside the campus with invited professionals and experts in the maritime field and includes written, oral and practical/demonstrative examinations. The cadets, likewise, shall satisfy the naval requirements for commissioning in the reserve force of the Philippine Navy, which is a pre-requisite for graduation.

Throughout their academic years in the academy, 4th, 3rd and 1st class years (2nd class being away on international shipboard training), the cadets are undergoing various upgrading courses, either in-house or company sponsored training. Presently, they are also performing routine weekly duties at the Subic Bay Metropolitan Authority (SBMA) sea crafts, a world-class seaport near the PMMA campus, under an agreement between the two public institutions. These practical experiences expose the cadets to real-time scenarios and maneuvers like rescue situations, routine patrol duties and other port activities that are invaluable in their intellectual and practical development.

5. Conclusion

Using the MMU and the PMMA as models for each country, it is desired to confine the comparison just on the curricular offerings between the two models. However, due to economically separated conditions that results to the differing teaching methodologies with emphasis on domestic environment, inevitably, the aim of the review unintentionally strayed to other areas that could not be helped in order to present a clear and forceful presentation, albeit the common goal of satisfying the end-user; and that is the maritime industry and ensure a safer and cleaner marine environment.

The review tries to show that Korea emphasizes on technology related subjects and offers a selection of majors that a student can choose from in an attempt to train him/her pursue a career in other fields of the maritime profession. Because of the high economic standard and government support, Korea is able to train cadets onboard their two training ships, conduct high level of simulated training using the advanced equipment and facilitates, good curricular offerings, among others. However, these comfortable environment, incidentally, create a vacuum for motivation for graduates to spend a longer sea time for them to gain sufficient experience to satisfy the thirst for expertise that the maritime industry needs in preparation

for their eventual shore employment.

The Philippine setting, in contrast, is comfortable with the vast human resource labor market. The motivation to serve onboard is abundant due largely to domestic economic conditions. Furthermore, the maritime education pedagogy centers not only on the academic upbringing but, rather, anchors equally with the development of inner human values through hard training and strong discipline. These prepare the young for the rigors of the life at sea, the social dysfunctions with the community and family relationships wrought upon by separation due to long sea-life. Modern technology, likewise, is present and is used liberally in the campus (PMMA model) facilities and with a concerted effort of the academe. Additionally, because of the strong support from the maritime community, the Filipino graduates maintains the high-level of motivation, loyalty to the profession and a deep-rooted discipline that make the PMMA and the Philippine MET in the pedestal of comfort zone.

Maritime transportation has to engage these factors head-on to fill in the gaps and plug any loopholes now being envisioned. Likewise, strengths and opportunities should be positively enhanced to make a firm hold on the ever-changing maritime environment. In this, maritime educational institutions, with the close cooperation of the industry, would have to work together and plan a cohesive strategy in molding new professionals in this field to ensure continuity in supplying ample and competent future generation of maritime experts.

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