



# Students' Onboard Experiences: Basis for Improved Shipboard Training Program Policy

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**Abstract**— *The Philippines is a major provider of seafarers, with the majority of Filipino sailors serving on merchant ships all around the world. To stay competitive in the global market, most shipping companies recruit maritime students through a variety of processes and provide them with the necessary knowledge, expertise, and skills. The experience of maritime cadets/cadettes in the workplace aids them in realizing and grasping the employment needs onboard merchant vessels. This quantitative research study assessed the onboard experiences of PMMA cadets in order to improve the academy's shipboard training program and policy. A researcher-made survey questionnaire via Google form was used to gather data from the 162 First Class cadets/cadettes who were graduating midshipmen of S.Y. 2020-2021. The study found out that the cadet-trainees were exposed to technical tasks during their shipboard training. In terms of challenges onboard, they never at all experienced sexual and verbal harassment and abuse. Accordingly, they have very low experience related to civic disengagement. Inculcating high tolerance in shipboard training related to work stress and condition is one of the strengths of the PMMA Shipboard Training Program and the assignment and availability of training officers on board was noted as one of its weaknesses.*

**Keywords**— *Assessment, Shipboard Training, Shipping Companies*

## I. INTRODUCTION

The Philippine Merchant Marine Academy is a maritime education institution in the country that offers Bachelor of Science in Maritime Transportation (BSMT) and Bachelor of Science in Marine Engineering (BSMarE). It is the only maritime institution among the members of the State Universities and Colleges funded by the national government. It is also affiliated with different maritime regulating bodies such as Maritime Industry Authority (MARINA) and Commission on Higher Education (CHED). Because of its industry-based curriculum, PMMA produces many marine officers who man international seagoing vessels. The Academy aligned its curriculum according to the global demands and guided by

the Standards of Training, Certification, and Watchkeeping (STCW) '78, as amended).

Based on CHED Memorandum Order No. 67 s. 2017, BSMT and BSMarE programs require the cadets to go through one-year training onboard ocean-going vessels, which is placed on the third year of the course, making it a sandwich type program. The purpose of onboard training is to improve the knowledge and skills acquired during the first two years of theoretical period and to assure that every midshipman is fully equipped with the necessary knowledge and skills before he/she graduates, as also required by ship owners and principals. The shipboard training program also provides all cadets with the opportunity to use a ship as a sea-going laboratory wherein they are required to complete their Training Record Books.

This Record Book is evaluated, graded and served as a requirement for enrollment in the final stage of the course as Fourth Year cadets.

PMMA has been entering into a Memorandum of Agreement with various Shipping Companies for the Shipboard Training Program of PMMA cadets. These shipping firms assist cadets in obtaining a high-quality education and training and they instill in them a sense of loyalty and commitment to the company's tasks. The Academy also partnered with the Philippine Coast Guard and Philippine Navy for the Cadetship and Scholarship Program of respective agencies. Graduates of PMMA are automatically commissioned in the Philippine Navy and Philippine Coast Guard as Ensign (2LT) (PMMA Admission Process, n.d.). Presently, the PMMA has more than forty (40) shipping and manning partners and benefactors where the cadets/cadettes carry out their shipboard training. This partnership with international shipping companies gave an opportunity to the efficient provisions of practical training among PMMA cadets/cadettes.

Shipboard Training is a mandatory requirement and component of the BSMT and BSMarE programs of PMMA that pertain to the required sea-going service as provided under Regulations II/I and Regulations III/I of the STCW Convention according to CHED Memorandum Order No. 70 s. 2017. It is the PMMA Department of Shipboard Training's (DST) responsibility to ensure the embarkation of all 2CL cadets/cadettes with their respective shipping companies. Cadetship of shipping companies follows a series of steps in their selection that includes qualifying exam and interview.

Shipboard training is a planned and structured program of training aimed to help a prospective candidate in achieving the standard of competence in accordance with the table of competences of the STCW Code (STCW, 2017). This is to fulfill the enormous technological demand on the shipping industry, which requires significant knowledge, technique, and sea experience for safe and cost-effective shipping operations. Further, the International Convention on the Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) prescribes that shipboard training is a condition to qualify as a seafarer.

Shipboard Training allows cadets to observe a ship and use it as a sea-going laboratory. Therefore, it is deemed vital to assess the cadets' shipboard training experiences to ensure that they receive the training needed to become globally competent seafarers.

This study aimed to assess the partner-shipping companies' shipboard training program implementation

services, programs, and policies and their provision of training tasks to acquire desired shipboard competency, based on the perceptions and experiences of the shipboard trainees. This also identified and analyzed the challenges encountered by the trainees. Moreover, through the findings, this study determined recommendations to improve the current Shipboard Training Policy of PMMA.

### 1.1. Integrated Related Literature and Studies

The availability of qualified seafarers is a fundamental element of shipping today which is of interest to all countries due to the unbalanced supply and demand situation (Erdogan & Demirel, 2017). The growing fleet means a growing recruitment problem. All maritime players in countries need to improve the situation and to solve the requirement for qualified seafarers which is directly related to maritime education and training system. The Maritime Education and Training (MET) is a dynamic field that needs to have a continuous review and update process supported with transfer of technology and innovation. According to them, the MET institutions must update their organization and management systems to support the requirements of the maritime industry. Although the concept of utilizing Virtual Reality, Augmented Reality, and Mixed Reality head-mounted display technologies for professional training and operations is not new, their recent developments and proliferation now allow for practical implementation and real-world application. The utilization of these technologies in the education, training, and operations of maritime industries provide new possibilities and paradigms to support operations both on land and at sea (Mallam, Nazir, & Renganayagalu, 2019).

MET qualifications and certifications would be more broadly recognized by other countries and that there would be consistency in the competency of officers from various parts of the world if there will be more practice-oriented and modern technology-enhanced simulators with competency to be assessed against the industry's standards. This would ensure safe, secure, clean, and efficient ship operations of life at sea, hence preventing maritime accidents. This would also promote the maritime profession, making the Filipino seafarers in demand by shipping companies to manage their business resulting in continuous work opportunities, promotion, better pay which will all be beneficial for the seafarers' family and the maritime industry in general (Baylon & Santos, 2011).

Shipboard training is necessary to meet the high technical demand of the maritime shipping industry of extensive knowledge, technique, and sea experience for the safe and economical shipping operation. Nam (2006) reiterated that the sea service requires responsibility, self-

confidence, a self-denying spirit, practical, and disciplined seafarers. In addition, Paraggua, et al., (2017) stressed the need for the utmost consideration and reflection of the maritime institutions towards shipboard training program, which is very relevant to maintain the country's status as the primary supplier and producer of highly qualified marine officers.

Nam (2006) also emphasized that shipboard training aims to cultivate both theory and practical experience with practical embarkation training as well as to train the cadets' ability and adaptation necessary in performing their tasks given a peculiar environment. Further, two types of shipboard training education were classified: (1) according to execution method (i.e., training in an exclusive ship and training by contract with a commercial shipping company); and (2) according to training time (i.e., multi-step completion type and continuous type). In the case of the PMMA, it implements shipboard training by contracting with a commercial shipping company as it does not have its own training vessel in a continuous manner during their third year of cadetship.

Sin and Im (2015) mentioned in their study that the one-year onboard training is a crucial part of cadets' training and education. Further, the choice of a training company is relevant. Based on their study on the cadets' satisfaction of on-board training, findings revealed that satisfaction from the environmental part is high, on the other hand, satisfaction on the conscious part and educational part are low. In terms of demographic characteristics, with generally high satisfaction are male in gender, apprentice officer in duty, others in kind of crew, container in kind of vessel, and 30,000 – 100,000 tons in size of vessel.

Besikci et al. (2019) noted that as far as the onboard training is concerned, the overall responsibility is always on the Master of the ship. The master must ensure that the training required by company procedures is conducted in an appropriate and timely manner. Should he/she consider so necessary, the master may make alterations to the pre-described path or conduct additional training. The Master must also make sure that drills required by international conventions and Flag state rules are performed and maintained as per the respective Drill program and that training records are kept appropriately.

In his research, Basco (2017) presumed that it is challenging to the cadets to take some training before they may be hired by shipping companies because of some obvious reasons like financial problems, lack of qualified instructors, substandard facilities for training and the high price of training fees. Furthermore, cadets have additional in-house training required by the shipping company

(Ching, 2017). It gives these cadets basic knowledge of their company policies and procedures and is specifically intended for the type of ship that cadets will embark for their one-year shipboard training from an international seagoing vessel. Hence, a Fourth-Class cadet/cadette must strive to qualify in the selection process. Aside from that, Paraggua, et al. (2014) recommended that the preparations provided to the cadets/cadettes prior shipboard training related to cargo operations such as inspections of cargo pumps and equipment and assistance with cargo maintenance work, should be improved.

Tang & Sampson (2018) identified potential factors that motivate or demotivate seafarers when undertaking training about new equipment. They reveal that seafarers' motivation is likely to be influenced by confidence that training is good for the job as well as for promotion. This shows that shipping companies can facilitate and encourage trainees to initiate learning activities but that they may equally adopt strategies which discourage learning. Enabling factors include: (1) establishing a positive learning environment; (2) adopting clear policies; (3) allowing seafarers to identify their own training needs and (4) allowing seafarers to request support for specific courses.

The study of Sevilla and Arceño (2017) revealed that personal qualities and the professional knowledge and skills that the deck cadets possess can greatly affect their task performance onboard. However, the profile in terms of the type of ship they were assigned to is not significantly related to their task performance. This means that their task performance did not depend on the type of ship. Furthermore, the study showed that personal qualities and professional knowledge and skills can affect the task performance of the cadets but not the type of ship they were assigned.

Further, for those who implement commission training by a contract shipping company, Nam (2006) mentioned that training conditions as well as insufficiency of accommodations in training ships pose challenges. Thus, it is important that the school makes an effort to cooperate with external companies especially for the training managers to teach the students effectively so that they would be able to grasp the training purpose completely.

The study of Lee, Dhési, Phillips, Jeong, & Lee (2021) found out that many cadets are not ensured with enough rest time and supply of personal protective equipment during their shipboard training. Some shipping companies also consider cadets to be crew members or temporary workers. To improve the training environment, they further recommended to (1) evaluate the ship's environment to determine whether it is suitable for

training, (2) constantly monitor whether the onboard training guidelines are maintained in the field, (3) strengthen preventive education on human rights violations, and (4) expand efforts continuously not only to physically improve the onboard training environment but systematically manage cadets as students. Sevilla and Arceño (2017) also emphasized that apprenticeship must be given more seriousness and sincerity as it is the only form of training program that the school can offer which would help the cadets improve their knowledge and skills thus producing effective and productive seafarers.

As Magramo and Gellada (2013) find out the effects of the lived experiences on board of Deck Cadets to their behavior and perceptions, they recommended that Cadets should always bear in mind that being away from home is part of growing up leading to maturity and coupled with responsibility. Proper mind set, faith in God, and love for the family should be the guiding posts of cadets while on board.

These integrated articles contain various concepts that would shed light and help in formulating recommendations to improve the Shipboard Training Policy of PMMA. These literatures provide facts and other pertinent information concerning the issues involved in shipboard training programs which would support the findings of this study. Areas like shipboard training services and policies, including the challenges of the trainees onboard, which are also mentioned in this review would back up the results of this research.

### 1.2. Theoretical Framework

Social Learning Theory, proposed by Albert Bandura, emphasizes the importance of observing, modeling, and imitating the behaviors, attitudes, and emotional reactions of others and considers how both environmental and cognitive factors interact to influence human learning and behavior. (McLeod, 2016)

According to this theory, the academic activities or programs offered within an educational institution do not address all learning types as there are some social elements which cannot be taught. Those elements are learned by the students from his/her surroundings. Such type of learning is called observational learning. (Four Major Theories of Training and Development, 2018). In the case of PMMA, the cadets need the training offered by various partner shipping companies where they can have the opportunity to observe and use a ship as a sea-going laboratory wherein they are required to complete their Training Record Books and achieve the standard of competence in accordance with the table of competences of the STCW Code. The environment plays a very important role and the people should be very professional in such a way that the

cadets will learn from them and they will also be influenced to adapt the proper attitude of a competent seafarer.

This study is also anchored to the Constructivist Learning Theory by John Dewey, which stresses that learning is an active process in which the learner uses sensory input and constructs meaning out of it and needs to do something. Learning is not the passive acceptance of knowledge which exists "out there" but that learning involves the learner's engagement and participation with the world (Constructivist Learning Theory, 2019). According to constructivist learning theory, knowledge must be applied because it is an interpretation of reality. People are more active learners than passive. Meaning, they learn best when they experience or discover things on their own, rather than simply being lectured. The theory also argues that learning is a collaborative learning process and individuals are much more willing to take in new information or revise their existing knowledge from a meaningful and relevant interaction from another learner. (Avelino, 2022) The PMMA Shipboard Training would allow the cadets to apply the theories they have learned during their 1st and 2nd academic years inside the academy. They will experience or discover things on their own inside a real vessel supervised and monitored by skilled and professional officers.

### 1.3. Statement of the Problem

The purpose of this study is to assess the PMMA partner-shiping companies' shipboard training program implementation towards improved academy's shipboard training policy.

Specifically, the study sought to answer the following questions:

- a. What is the demographic profile of the shipboard trainees in terms of the following
  - a.1. Type of vessel;
  - a.2. Crewing company;
  - a.3. Principal
  - a.4. Length of Shipboard Training
  - a.5. Nature of crew
- b. How do the shipboard trainees perceive the partner-shiping companies' shipboard training program implementation services, programs, and policies?
- c. How do the shipboard trainees perceive the partner-shiping companies' provision of training tasks to acquire desired shipboard competency?
- d. How do the shipboard trainees perceive the identified challenges onboard?

- e. What is the Cadet-Respondents' rating on the Shipboard Training Program relative to the following:
  - e.1. their Expectations
  - e.2. confidence in their Ability; and
  - e.3. overall Onboard Training Program?
- f. Is there a significant relationship between the provision of tasks and the following demographic profile:
  - f.1. Type of Vessel;
  - f.2. Length of Shipboard Training;
  - f.3. Nature of Crew?
- g. What is the significant difference between the deck and engine responses in terms of:
  - g.1. Shipboard Training Services, Programs, and Policies;
  - g.2. Challenges onboard;
  - g.3. Expectations of respondents on the shipboard training;
  - g.4. Confidence in their abilities; and
  - g.5. Over-all Training Program provided onboard?
- h. Based on the results, what are recommended to improve the PMMA Shipboard Training Program Policy?

**II. METHODOLOGY**

**2.1 The Research Design**

This study used quantitative research design. This type of research design is used when an aggregate of individual observations is made through measurement (AFFIRM Center for Research and Professional Learning, Inc, 2019).

Specifically, this study used a descriptive research design which primarily aims to describe a population, situation or phenomenon accurately and systematically (scribbr.com). Further, this study is a descriptive evaluation study as it describes the process and impact of the development and implementation of the Shipboard Training Program. The findings of this type of study are often explored within the implementation environment, such as — for our purposes, the Philippine Merchant Marine Academy.

**2.2 Respondents**

The participants of the study were the First Class cadets/cadettes who were graduating midshipmen of S.Y. 2020 - 2021. There were 86 BSMT and 83 BSMarE midshipmen/women. One hundred sixty-two (95.86%) responded in the survey, 82 (50.62%) deck cadet/cadettes and 80 (49.38%) engine cadet/cadettes. These respondents

were selected through convenience sampling. This sampling technique involves utilizing respondents who are “convenient” to the researcher (Galloway, 2005). No pattern or whatsoever was followed in selecting the respondents, instead, in the case of this study, respondents were those who answered the questionnaire via Google Form.

**2.3 Instrument**

A researcher-made survey questionnaire via Google form was used to gather quantitative data regarding the research problem. Two sets of survey questionnaires were made for deck and engine cadets. The survey questionnaire has five (5) parts: demographic profile of shipboard trainee; partner-shipping companies’ services, programs, and policies; provision of tasks, challenges onboard; and satisfaction on the training program received onboard.

**2.4 Procedure**

The following are the detailed steps in conducting the survey:

- a. The survey instrument was created using a survey questionnaire via Google form.
- b. The researchers sought approval of the concerned heads/departments regarding the distribution of survey instrument to the respondents.
- c. The researchers administered the survey instrument to the respondents using google form and email address and printed questionnaire.
- d. The researchers gathered, monitored and tallied the responses and;
- e. Tabulated, Interpreted and Analyzed data in Microsoft Excel.

To determine the cadets’ demographic profile, their perceptions on the partner-shipping companies’ shipboard training program implementation services, programs, and policies, provision of training tasks to acquire desired shipboard competency, and challenges onboard, the frequency counts, percentages and means were used.

*Table 1. Likert Scale Interpretation*

|             |   | <b>Agreement</b>  | <b>Provision and Challenges</b> |
|-------------|---|-------------------|---------------------------------|
| 4.21 - 5.00 | 5 | Strongly Agree    | Very High                       |
| 3.41 - 4.20 | 4 | Agree             | High                            |
| 2.61 - 3.40 | 3 | Moderately Agree  | Low                             |
| 1.81 - 2.60 | 2 | Disagree          | Very Low                        |
| 1.00 - 1.80 | 1 | Strongly Disagree | Never at All                    |

### III. RESULTS AND DISCUSSION

#### 3.1 Profile of the Respondents

##### 3.1.1 Type of Vessel

Cadets should undergo onboard training to meet the requirements set by the STCW Convention. Most of the respondents were onboard bulk carriers with 81 out of 162 or 50% followed by tankers with 37 or 22.84%. Twenty-three (23 or 14.20%) cadets were assigned to container ships.

Under the Safety of Life at Sea Convention (SOLAS), it defines bulk carriers as ships intended to carry cargoes in bulk (Ship types and their purpose, n.d.). The bulk carriers are often referred to as the workhorses of the maritime business; these ships are designed specifically to carry dry cargoes such as grain, iron ore and coal, in bulk (Maritime Industry Knowledge Center, n.d.). The first bulk carrier was built in 1852. Today, bulk carriers are designed to maximize capacity, safety and durability, and they make up 21% of the world's merchant fleet. The bulk carriers' sizes differ from single-hold mini-bulk carriers to mammoth ore ships that can carry 400,000 metric tons of deadweight (DWT). Valemax is the largest bulk carrier class in terms of DWT (World Largest Bulk Carriers, 2020).

Tankers carry liquid cargoes in bulk and are responsible for transporting most of the world's energy needs. The vessels are designed for a particular purpose of transporting liquified goods such as crude oil, petroleum, wine, etc., in bulk (Mohit, 2019).

Container ships carry most of the world's manufactured goods and products, usually on scheduled liner services. At about 90%, the international shipping industry accounts for most of the world's commodity trade. According to the International Chamber of Shipping, there are currently more than 50,000 merchant ships sailing in the world's oceans. A container ship is a cargo ship that carries cargo in a large marine container. Presently, there are seven major types of container ships in service. In ascending order, they are – Small Feeder, Feeder, Feedermax, Panamax, Post Panamax, New Panamax (or Neo Panamax), and Ultra Large Container Vessel (ULCV). The biggest container vessel now rivals crude oil tankers and bulk carriers as the largest commercial seaborne vessels. With a capacity of 23,992 TEUs, Ever ACE is currently the world's largest container ship. It set sail on her maiden voyage in July 2021 (MI News Network, 2019).

At present, the Academy has around forty (40) partner shipping companies and some of these companies are mostly bulk, tanker and container vessel operators such

as Abacus Ship Management Ltd., Fair Shipping, Fleet Management Limited, and Crossworld. Thus, most of the cadets are aboard these types of vessel.

According to Vesselsvalue, as of November 2021, China, Japan and Greece are the Top 3 shipowning nations globally (Prevljak, 2021).

##### 3.1.2 Crewing Company

The shipboard training of the cadets was facilitated by several crewing companies with the following having the highest number of cadets onboard: 1) Crossworld – 17 cadets; 2) Fleet Management Limited – 16 cadets; 3) Cargo Safeway, Inc. - 14 cadets; 4-5) Fairshipping Inc. And Manila Shipment and Manning Inc. - 12 cadets each; 6) Odjfell Philippines Inc. - 11 cadets; 7-8) Alphera Marine Services Inc. and Jebsen – 7 cadets each; 9-10) Epsilon Maritime Ltd and Kestrel Shipping Inc – 6 cadets each.

Crossworld Maritime Services Inc. is a world-class crew management company aimed at helping their clients optimize their performance by providing qualified and competent seafarers as well as provide continual sea training to the seafarers and establish a “team-working” environment for the land-based personnel. To date, Crossworld proudly manages and provides crew services to three hundred (300) vessels and more than twenty-five (25) ship management companies worldwide (History, n.d.).

Fleet Management Limited, accordingly, is one of the largest independent third-party ship management companies managing over 650 diverse types of vessels with over 24,000 seafarers and 1,000 onshore professionals (Fleet Management Limited, 2022).

On the other hand, Cargo Safeway are manning agencies with Taiwanese and Japanese principals with different types of vessels ranging from Container, Bulk, Logs. They are the sole manning agent of Evergreen (SeamanJobsite, 2013).

##### 3.1.3 Principal

In terms of the cadets' principal during their training onboard, the top ten (10) principals are the following: 1) Cargo Safeway Inc. - 16 cadets; 2) Ionic Shipping Management Corporation – 11 cadets; 3) Fleet Management Ltd. - 10 cadets; 4 – 6) Golden Union Marine Services, Latsco Marine Management, and Odjfell Philippines Inc. - 9 cadets each; 7) Fairshipping FJL – 7 cadets; 8 – 9) Crossworld and UMMS – 5 cadets each; and 10) Zeaborn Ship Management – 4 cadets. A ship agent's principal pertains to the “party who appointed the agent and will be paying the agency fee” (Ship Inspection,

2015). For instance, if the shipowner will be the one paying the agency fee, he/she is the principal.

### 3.1.4 Length of Shipboard Training

The PMMA Shipboard Training Program adheres to the Revised Guidelines on the implementation of the Onboard Training requirement under the BSMT and BSMarE programs of Annex B, Joint CHED-MARINA Circular No.1, Series 2019. The shipboard training is a mandatory minimum requirement for every candidate for the conferment of the degree BSMT and BSMarE programs.

Table 2 shows the length of Shipboard Training of the respondents. A total of 91 or 56.17% had their sea training in less than 12 months. This is inadequate for the required seagoing service. As stated in CHED Memorandum Order no. 20 s. 2014, "Pursuant to the 1978 STCW Convention and Code, as amended, seagoing shall be categorized into either: (a) twelve (12) months structured seagoing service or (b) thirty-six (36) months unstructured seagoing service that shall be undertaken by the BSMT and BSMarE cadets/students in order to complete the requirements for the conferment of a Bachelor's degree in Marine Transportation or in Marine Engineering, respectively and to be qualified for certification as an Officer-in-Charge of a watch."

Table 2. Profile of Respondents in terms of Length of Shipboard Training

|                     | DECK      | ENGINE    | TOTAL      | %             |
|---------------------|-----------|-----------|------------|---------------|
| Less than 12 months | 42        | 49        | 91         | 56.17         |
| 12 months and above | 38        | 33        | 71         | 43.83         |
| <b>TOTAL</b>        | <b>80</b> | <b>82</b> | <b>162</b> | <b>100.00</b> |

Academy policy on structured shipboard training program states that if cadets were not able to complete their seagoing service, a guaranteed letter coming from their company stating it will shoulder the expenses he/she will incur to complete the 12 months sea service onboard domestic vessel must be submitted. On the other hand, those who walked-in to the shipping company, must submit a written waiver stating that he/she will shoulder all the expenses that will be incurred for the completion of his/her sea service of 12 months.

Based on the findings, there were 71 (43.83%) respondents who finished the 12 months of shipboard training and even exceeded. Based on verification with officers of the Department of Shipboard Training (DST), the duration of seagoing service contracts of cadets with their companies are usually 9 months instead of a full one year due to mental health issues of seafarers who go onboard for longer period of time as well as regulation from port authorities like the Australian Maritime Safety

Authority (AMSA), European Maritime Safety Agency (EMSA), and the Maritime Labor Convention (MLC). Thus, for the 91 cadets who were not able to complete the mandatory sea service, they must go onboard a second vessel or in domestic vessels to complete the 12 months. The DST officers, upon interview also said that in case the cadet-trainees would not be able to finish the 12-month training, then they would be completing the sea service with their company once they graduated so that they will be able to take the licensure examination.

Moreover, Lušić, Bakota, Čorić, & Skoko (2019) even recommended that educational and training institutions, together with the companies employing seafarers, must constantly invest into supplementary training of the crew members, and create long-term plans and strategies in order to ensure sufficient high-quality workforce on the seafarer market.

### 3.1.5 Nature of Crew

Table 3 shows the profile of the respondents in terms of nature of crew. The majority of the respondents were onboard a mixed nationality crew with 92 or 56.79%. The cadets were able to work with a diverse group of different nationalities such as Chinese, Korean, Greek, Indian, Croatian, Polish, Russian, Ukrainian, Burmese, Ghanaian, Romanian, Taiwanese, Vietnamese, Norwegian, Malaysian, Japanese, and Turkish.

Table 3. Profile of Respondents in terms of Nature of Crew

| NATURE OF CREW     | DECK      | ENGINE    | TOTAL      |
|--------------------|-----------|-----------|------------|
| Full Filipino Crew | 36        | 34        | 70         |
| Mixed Crew         | 44        | 48        | 92         |
| <b>TOTAL</b>       | <b>80</b> | <b>82</b> | <b>162</b> |

Modern shipping is a highly international, multicultural, and technological industry with strong demands on economic efficiency and profitability. This is manifested in ship crews, which are often multinational. Ship crews nowadays invariably include seafarers serving onboard from different nationalities. Based on the study conducted by Seafarers International Research Center in 2003, about 60% of ships have multinational crews. A more recent study showed that 85% of vessels that call in ports in Finland have a multinational crew mix and that two and three nationalities are the most prevalent crewing pattern. Based on the study of Galešić & Coslovich, S. (2019), 95% of the respondents have worked with the Filipino crewmembers. Apart from the nationalities coming from the Philippines, Indonesia, China, India, there is also from Baltic states, Poland and the former Soviet Union countries.

## 3.2 Shipboard Trainees' Perception of Partner Shipping Companies' Shipboard Training

### Program Implementation Services, Programs, and Policies

Presented in Table 4 are the responses of the cadets when asked about their perception on partner shipping companies' shipboard training program implementation services, programs, and policies. It can be gleaned that both the Deck and Engine cadets agree that they experienced the services with the accommodating nature of the crewing staff in the processing of documents got the highest rating of 4.51 and 4.17 respectively. This implies that the crewing staff are very accommodating to the cadets to ensure that the crew are well documented and properly briefed on their task onboard as a cadet.

*Table 4. Deck and Engine Cadet-Respondents' Perception on Partner Shipping Companies' Shipboard Training Program Implementation Services, Programs, and Policies*

| Shipboard Training Services, Programs, and Policies   | DECK CADET    |                    |      | ENGINE CADET  |                    |      |
|---|---------------|--------------------|------|---------------|--------------------|------|
|   | Weighted Mean | Descriptive Rating | Rank | Weighted Mean | Descriptive Rating | Rank |
| 1 Crewing Staff accommodating in documents processing   | 4.51          | Strongly Agree     | 1    | 4.17          | Agree              | 1    |
| 2 Company conducted several in-house trainings  | 4.39          | Strongly Agree     | 2    | 4.06          | Agree              | 2    |
| 3 Company has structured cadetship program  | 3.99          | Agree              | 6    | 3.98          | Agree              | 3    |
| 4 Company has strict policy in accomplishing training book  | 3.93          | Agree              | 9    | 3.9           | Agree              | 8.5  |
| 5 Trainees given time to adjust   | 4.11          | Agree              | 3    | 3.94          | Agree              | 6    |
| 6 Company has a dedicated shipboard training officer  | 3.96          | Agree              | 7    | 3.87          | Agree              | 13.5 |
| 7 Cadetship training is considered officer's training   | 3.91          | Agree              | 10.5 | 3.9           | Agree              | 8.5  |
| 8 Was given extra time to accomplish training book  | 3.73          | Agree              | 14   | 3.88          | Agree              | 11.5 |
| 9 There is an assigned training officer on board  | 3.83          | Agree              | 12.5 | 3.87          | Agree              | 13.5 |
| 10 Officers onboard are accommodating trainee queries   | 4.04          | Agree              | 4    | 3.95          | Agree              | 4.5  |
| 11 Training officer assists in accomplishing documentary requirements prior disembarkation                                      | 4             | Agree              | 5    | 3.95          | Agree              | 4.5  |
| 12 Acquisition of documents and certificates, submission of reports and accomplishments of clearance is simple                  | 3.93          | Agree              | 8    | 3.93          | Agree              | 7    |
| 13 Post shipboard orientation guide for trainees disembarkation   | 3.83          | Agree              | 12.5 | 3.89          | Agree              | 10   |
| 14 Company extends assistance even after completion of shipboard training particularly in release of certificates and documents | 3.91          | Agree              | 10.5 | 3.88          | Agree              | 11.5 |
| <b>Overall Weighted Mean</b>  | <b>4</b>      | <b>Agree</b>       |      | <b>3.94</b>   | <b>Agree</b>       |      |

*Legend: 1.00-1.80 Strongly Disagree, 1.81-2.60 Disagree, 2.61-3.40 Moderately Agree, 3.41-4.20 Agree, 4.21-5.00 Strongly Agree*

The conduct of several in-house training garnered the second highest rating of 4.39 and 4.06, respectively. On the other hand, the deck respondents agreed to the rest of the services, programs, and policies relative to the shipboard training program with giving extra time to accomplish the training book having the lowest rating of 3.73 for Deck cadets.

According to the 71% of the respondents in the study of Faris Hodroj (2020), they alone are planning their training record book and maintaining it and no supervisors are ensuring that their time onboard is spent usefully regarding training. Some of the respondents commented that the tasks in the record book can't be completed properly since they are considered free deck workers in the current training system.

All indicators were rated agree (3.41-4.20) by the Engine cadets. Compared with the ratings from the Deck cadets, this implies that the Deck cadets experienced better services from Partner Shipping Companies during their shipboard training than the Engine Cadets. As presented in Table 4, it can be inferred that the crewing staff who oversee the document processing of the Deck cadets are more accommodating than the Engine cadets. Also, the company assigned to the Deck cadets conducted more in-house training than the Engine cadets. According to the interview conducted, deck officers need to undergo more training than engine officers. Further, most of the officers in the crewing companies are deck officers, thus, they tend to be more accommodating to their similar fields. In addition, ship managers in these companies are mostly Captains instead of Chief Engineers who were mostly assigned as marine superintendents, the DST officers added.

On the other hand, the lowest rating was on both statements, "Company has a dedicated shipboard training officer" and "There is an assigned training officer on board" with 3.87. This is due to the fact that shipping companies are trying to minimize the number of crew members onboard to minimize cost; thus, officers are focused on their assigned onboard tasks rather than training the cadets. The quality of shipboard training experienced by the cadets is characterized as a highly regulated and reinforced professionalization process intent on producing qualified officers (Abila, 2016).

The research of Kapoor and Maxwell (2020) mentioned that any training that is carried out on board, as a part of an approved training program must be recorded in the training record book. This book is required to be completed during their shipboard training and is approved by the administration granting the certificate. It is a vital part of the training program. The book not only gives a thorough record of shore-based training and onboard duty but also enables practical assessment of assignments. The book must be completely filled-out and signed by the Master or another duly authorized officer verifying that the various assignments and tasks are accomplished. Relatedly, the study of Sevilla and Arceno (2017) indicates that the shipboard training program should be treated seriously and with sincerity, since this is the only form of structured training program that the maritime institution conducts to enhance the cadets' knowledge and skills; thereby making them more effective and productive seafarers.

### 3.3 Shipboard Trainees' Perception on Partner Shipping Companies' Provision of Training Tasks to Acquire Desired Shipboard Competency



**a. Deck Cadets**

Table 5 shows the deck cadets' experiences related to their onboard provision of tasks. Out of 21, ten (10) training tasks got a very high rating with actual mooring operation having the highest rating of 4.60. The rest of the duties got a high rating with actual practice of trim and stability garnering the lowest rating of 3.36. Actual mooring operation, which ranked one (1), is very high because the cadets are involved in this actual mooring operation. Watch keeping duties during cargo operation got the second highest rating of 4.58. This can be explained since most of the respondents have undergone shipboard training in bulk carriers which carry cargoes and because cadets are of great help to the officers in monitoring cargo operation.

*Table 5. Deck Cadets' Perception on Partner Shipping Companies' Provision of Training Tasks*

| Provision Of Tasks                                    | Weighted Mean | Descriptive Rating | Rank |
|---|---------------|--------------------|------|
| 1. Actual Mooring operation                           | 4.6           | Very High          | 1    |
| 2. Watch keeping duties during cargo operation        | 4.58          | Very High          | 2    |
| 3. Deck maintenance and repair                        | 4.54          | Very High          | 3    |
| 4. Anchoring operation                                | 4.39          | Very High          | 4    |
| 5. Life-saving equipment inspection and maintenance   | 4.33          | Very High          | 5    |
| 6. Actual steering of the ship                        | 4.3           | Very High          | 6    |
| 7. Fire-fighting equipment inspection and maintenance | 4.29          | Very High          | 7    |
| 8. Cargo care during navigation                       | 4.28          | Very High          | 8    |
| 9. Immersion of deck security watch                   | 4.25          | Very High          | 9    |
| 10. Weather monitoring and observation                | 4.21          | Very High          | 10   |
| 11. Bridge watch keeping                              | 4.18          | High               | 11   |
| 12. Use of RADAR/ARPA for collision avoidance         | 4.14          | High               | 12.5 |
| 13. Tank cleaning                                     | 4.14          | High               | 12.5 |
| 14. Ballasting and de-ballasting operation            | 4.08          | High               | 14   |
| 15. Tank sounding                                     | 4.08          | High               | 15   |
| 16. Use of ECDIS in passage planning                  | 4.01          | High               | 16   |
| 17. Use of echo sounder to monitor UKC                | 3.99          | High               | 17   |
| 18. Actual survey of arrival and departure draft      | 3.94          | High               | 18   |
| 19. Knowledge in preparation of noon reports          | 3.76          | High               | 19   |
| 20. Chart plotting and navigation                     | 3.75          | High               | 20   |
| 21. Actual practice trim and stability                | 3.36          | High               | 21   |
| <b>Average Weighted Mean</b>                          | <b>4.15</b>   | <b>High</b>        |      |

Legend: 1.00-1.80 Never at All, 1.81-2.60 Very Low, 2.61-3.40 Low, 3.41-4.20 High, 4.21-5.00 Very High

Steering a ship is one of the basic skills that a deck cadet should acquire as a future navigating officer. The deck cadets were taught theoretically and able to experience it through the full bridge simulator of the Academy. A bridge simulator is a system of computers, screens, hardware and software that simulates various shipboard operations such as ship handling, channeling, anchoring, etc. The deck cadets' performances were consistent with the theoretical knowledge gained in school and with the acquired skills, competences, and actual work performance requirements onboard ship experiences; the required tasks gave them a high level of performance, (Ochavillo, 2015).

On the other hand, eleven (11) tasks were rated as high by the deck respondents. This is because these tasks are too technical in nature and cadets are not allowed to perform these without the supervision of deck officers. These include the use of ECDIS, RADAR/ARPA and echo sounder.

**b. Engine Cadets**

Table 6 shows the provision of tasks by the partner shipping companies to the cadets. Two (2) tasks got a very high rating: actual entry to logbook/noon report (4.29) and fuel transfer and bunkering operation (4.20). The rest got a high rating. This implies that the cadet-trainees were exposed to technical tasks during their shipboard training. In terms of the actual entry to logbook, it was rated very high because of the time the cadets are tasked/trained to accomplish the recording in the logbook to lessen the load of the engineer's work. Accordingly, most of the time, bunkering operations involve all the engine department crew; thus, engine cadets are well involved in the activity.

*Table 6. Engine Cadets' Perception on Partner Shipping Companies' Provision of Training Tasks*

| Provision Of Tasks  | Weighted Mean | Descriptive Rating | Rank |
|---|---------------|--------------------|------|
| 1. Actual entry to logbook/noon report                        | 4.29          | Very High          | 1    |
| 2. Fuel transfer and Bunkering operation                      | 4.2           | Very High          | 2    |
| 3. Engine repair and maintenance works                        | 4.18          | High               | 3    |
| 4. Engine watch keeping                                       | 4.11          | High               | 4    |
| 5. Main engine operation during ships maneuvering             | 4.1           | High               | 5    |
| 6. Fresh water generator operation and maintenance            | 4.06          | High               | 6    |
| 7. Purifier operation, repair and maintenance works           | 4.02          | High               | 7    |
| 8. Pumps operation, repair and maintenance works              | 4.02          | High               | 8    |
| 9. Diesel generators operations, repair and maintenance works | 4             | High               | 9    |
| 10. Engine overhauling  | 3.96          | High               | 10   |
| 11. Bilge operation and maintenance work                      | 3.93          | High               | 11   |
| 12. Conduct of engine performance                             | 3.9           | High               | 12   |
| 13. Emergency generator/ fire pump operation and maintenance  | 3.9           | High               | 13   |
| 14. Sewage treatment plant operation                          | 3.85          | High               | 14   |
| 15. Air compressor operation, repair and maintenance works    | 3.83          | High               | 15   |
| 16. Boiler water treatment                                    | 3.79          | High               | 16   |
| 17. Oily-water separator operation and maintenance            | 3.78          | High               | 17   |
| 18. Boiler repair and maintenance works                       | 3.73          | High               | 18   |
| 19. Air compressor repair and maintenance works               | 3.72          | High               | 19   |
| 20. Refrigeration operation, repair and maintenance works     | 3.62          | High               | 20   |
| 21. Electrical repair and maintenance works                   | 3.59          | High               | 21   |
| 22. Electrical, electronics and control engineering           | 3.48          | High               | 22   |
| <b>Average Weighted Mean</b>                                  | <b>3.91</b>   | <b>High</b>        |      |

Legend: 1.00-1.80 Never at All, 1.81-2.60 Very Low, 2.61-3.40 Low, 3.41-4.20 High, 4.21-5.00 Very High

Contrary to the results of the task provision of deck cadet-respondents, engine cadet-respondents have only two (2) tasks with very high ratings while the rest have high ratings. This is because engine tasks are very technical. Thus, engine cadets are not allowed to directly operate the machines and must be assisted by engineers onboard when dealing with the machines.

During the pre-embarkation period, the cadets received the approved Training Record Book (TRB). The TRB is accredited by CHED and approved by the Administration for the purpose of providing structured training for job tasks required to be carried out onboard

until such a time that STO's onboard can attest that the cadet has acquired the proficiency to do the task with minimal supervision. The cadets are required to complete their TRB which shall be submitted to the DST upon disembarkation for their assessment and as a requirement for enrollment for the last part of their academic year.

In the study of Gerganov and Lipenkov (2021), organizational and pedagogical conditions for the formation of professional competence in future marine engineers are developed and implemented in the educational process, which contributes to the construction of an effective individual educational competence in a higher maritime institution.

### 3.4 Shipboard Trainees' Perception on the Identified Challenges Onboard

In terms of challenges onboard, the deck cadet-respondents revealed that they have never at all experienced sexual and verbal harassment and abuse with a rating of 1.65. Consequently, they have very low experiences related to poor relationship in the workplace, inadequate health and welfare activities, discrimination, security issues, health issues, negative cultural stereotypes, high social tension, and civic disengagement; while the following have low ratings: language barrier, homesickness, ship safety in unpredictable weather, fatigue, stressful working environment, and erratic sleeping schedules.

For the engine cadet-respondents, they have very low experiences on the following challenges onboard: discrimination, high social tension, civic disengagement, and sexual and verbal harassment and abuse. Accordingly, the following were rated low: language barriers, homesickness, ship safety in unpredictable weather, fatigue, poor relationship in workplace, stressful working environment, inadequate health and welfare activities, security issues, erratic sleeping schedules, health issues, and negative cultural stereotypes. Sexual and verbal harassment and abuse garnered the lowest rating especially that the International Labor Organization (ILO) approved the Violence and Harassment Convention. This convention was preceded by a report on ending violence and harassment against women and men in the world of work (ILO, 2018).

In the study of Manalo, et al. (2015), findings revealed that common challenges onboard are homesickness, fatigue, family issues, discrimination, bad communication, and poor work relationships. This is in consonance with the present study since although low, the challenges with the highest rating are fatigue, ship safety in unpredictable weather, erratic sleeping schedules,

stressful working environment, homesickness, and language barrier.

According to the marine faculty of Istanbul Technical University, as cited by Manalo et al (2015), in these days of global crews, a variety of languages may be used or alternatively one working language may be adopted. Whichever is used, ships trading internationally must manipulate a ship to shore using a language that can be understood. Navigational and safety communications must be correct and explicit to avoid confusion and error. And in the world of international shipping, the chosen international standard for achieving effective communication in working on board and between ship and shore is the English language. A capable standard of English is therefore not only an international requirement for certification of seafarers but also a key element in ensuring safe at work, efficient in skills and beneficial ship operations. The seafarers need communication onboard ships and since maritime professionals came from different countries, it is just right to speak in common language, and English is used for this purpose. Since the cadets/cadettes had their shipboard training internationally, they need to acquire the skills of effective communication. This is why the Office of the Assistant Superintendent for Academics, Training and Research enforced English as working language. The midshipmen are required to speak in English inside the Academy except in Filipino subjects (OAS-ATRE Memorandum Order No. 17 s. 2018). Because of the international character of shipping, maritime English has proved to be a very important part of future officer training.

### 3.5 Cadet-Trainees Rating of their Shipboard Training Experience

#### a. Cadet-Trainees Rating of their Shipboard Training Experience against their Expectations

Majority of the deck cadet-respondents rated their shipboard training as fairly met their expectations with 62.50% while 35% fairly met their expectations, and 2.50% never met their expectations.

In terms of the engine cadet-respondents' rating of the shipboard training against their expectations, the majority, 55 or 67.07% stated that the training program fairly met their expectations. This may be due to the fact that they have been given opportunities to work in the day and to work with officers, although limited.

At Korea Maritime University (KMU), onboard the KMU training ships, the cadets are attending classes, standing security watches, and conducting day work activities. Day work consists of performing minor repairs, maintenance, and cleaning. When cadets are engaged in

day work activities, they do not attend class unless an exam is being given (Desrosiers, 2000).

#### **b. Cadet-Trainees Rating on their Confidence in their Ability**

Cadets should acquire the knowledge and competency required by the STCW through onboard training to become maritime officers. Indeed, the Academy prepared the cadets on theory and practical works on seamanship during their First and Second Year in preparation for the shipboard training, but the practical experience gained as a cadet onboard ship is better than any of these.

Relatedly, the deck cadet-respondents are mostly confident, 65%, of their abilities after the shipboard training program. This is in connection with their experiences of the provision of tasks wherein they have stated that they have very high and high experiences, resulting in a high confidence level. The deck cadet respondents were 65% confident in their ability to perform their tasks in the shipboard training while 35% were slightly confident.

Despite the confidence of these cadet-respondents, Paraggua, et al. (2014) identified minimal issues in their study which assessed the PMMA shipboard training program, such as observance of proper reporting; practice of simpler communication onboard with multi-lingual crew; familiarization of flags and their messages; and knowledge on legislative requirements. It was recommended that subjects covering these must be reviewed and intensified. Their findings could still be true as 35% evaluated themselves as slightly confident despite undergoing shipboard training.

Conversely, in terms of the engine cadet-respondents' confidence in their abilities after the shipboard training program, the results are split – 50% each slightly confident and confident.

This implies that since many companies do not have a dedicated training officer to train and monitor them, they feel that they were not trained enough and there is not enough time to accomplish all tasks required under the Training Record Book (TRB). Accordingly, the study of Munir et.al. (2003) discussed that coaching variables are determining factors that affect job performance (self-confidence, motivation, job satisfaction, etc.). Thus, relatedly, if there was no dedicated training officer onboard who would serve as the cadets' coach, their self-confidence could also be low. Moreover, as stated by Sevilla and Arceno (2017), coach-coachee relationship can be likened to the onboard trainer officer-cadet relationship wherein the shipboard trainer officers supervise the theoretical, actual, and progress in the practical skills of the cadets onboard.

#### **c. Cadet-Respondents' Overall Onboard Training Program Rating**

##### *c.1. Deck Cadets*

The main objective of the shipboard training is to apply the knowledge learned inside the Academy. Most of the respondents perceive the training as very good while a good number see it as excellent. This implies that the practical application or the knowledge gained during their education at the PMMA is applied onboard. In addition, the cadet-trainees acquired practical skills and knowledge while working with professionals onboard.

It is also good to note that about 3.80% of the respondents rated the training program as Fair. Based on verification from the officers of the PMMA DST, this is because some companies do not have a structured training program for the cadets, thus, they end up doing work of ratings. In addition, some of the cadet-trainees were not allowed to go to the bridge for actual watchkeeping duties. Finally, some of the cadet-trainees were on day work and were not given extra time for the accomplishment of the Training Record Book (TRB).

##### *c.2. Engine Cadets*

In terms of the overall training onboard, 41.46% of the engine cadet-respondents rated the training program as very good because of the difficulties and expectations they encountered during their 12 months of shipboard training.

This is in consonance with the study of Paraggua, et.al. (2015) that the trainers perceived the performance of cadet-trainees as very satisfactory in terms of their knowledge and understanding of the tasks, as well as work competency. Kim and Kim (2013) revealed in their study that majority of their respondents who were training students were satisfied with the onboard training program according to the approved training records; however, there was dissatisfaction on the lack of training equipment and lack of training opportunities and time.

### **3.6 Significant Relationship between the Provision of Tasks and Demographic Profile of Respondents**

#### **a. Type of Vessel**

There is no significant relationship between the provision of tasks and type of vessel that the deck cadets went aboard. This implies that the tasks given to the cadets are independent on the type of vessel they are boarded on. The cadets are intentionally trained to properly perform various tasks necessary in acquiring desired shipboard competencies involving different types of vessels.

Accordingly, the study of Sevilla and Arceño (2017) revealed that the profile in terms of the type of ship the cadets were assigned to is not significantly related to their

task performance. This means that their task performance did not depend on the type of ship. Furthermore, the study showed that the personal qualities and professional knowledge and skills can affect the task performance of the cadets but not the type of ship they were assigned.

For engine cadet-respondents, there is a significant negative relationship between the provision of tasks and the type of vessels of engine cadets,  $r(80) = -0.293$ ,  $p = 0.008$ . This implies that there is an inverse relationship between the type of vessel and provision of task. Further, it indicates that the mean of provision of tasks increases according to the type of vessel, with tanker having the highest mean of 4.06, followed by car carrier with 4.02, bulk carrier with 3.99, container ship with 3.75, general cargo with 3.64, RORO/Passenger with 2.84, and lastly, specialized vessel with 2.73. This means that those who were aboard tanker ships were given more opportunities to perform shipboard training tasks as compared to other types of vessels.

#### **b. Length of Shipboard Training**

For both engine and deck cadets, there is no significant relationship between the length of shipboard training and provision of task. This implies that the length of shipboard training does not affect the mean provision of task.

The length of shipboard training is not a basis for the tasks to be provided to the cadets. All cadets have the chance to work on various tasks no matter how long their training is. All the tasks are meant to develop the skills and competencies of the cadets in becoming efficient and world-class seafarers.

#### **c. Nature of Crew**

##### **c.1. Deck Cadets**

The nature of the crew affects provision of tasks for deck cadets. This has been confirmed by the results of the Pearson correlation test which indicate that there is a significant negative relationship between the nature of crew and the deck cadets' experience on the provision of tasks onboard.

This implies that the mean of provision of tasks increases when the nature of crew is full Filipino ( $M = 4.29$ ) as compared to a mixed crew ( $M = 4.04$ ). This indicates that the deck cadet-respondents were given more opportunities to act and perform tasks when the crew is full Filipino as compared to a mixed crew ship. This may be attributed to possible miscommunications (Badawi and Halawa, 2013) and complexity of shipboard relationships (Gould, 2011) in multicultural crew ships. In addition, deck cadets are taught and trained more if the crew is all Filipino since if the ship is multinational crew, the other

nationalities could see Filipinos as a threat or competitor; thus, they do not provide learning opportunities to them.

##### **c.2. Engine Cadets**

Contrary to the results for deck cadet-respondents, correlation test revealed that there is no significant relationship between provision of tasks and nature of crew for engine cadet-respondents. This implies that the nature of the crew does not affect the level of provision of the indicated shipboard tasks during their training onboard.

### **3.7 Significant Difference between the Deck and Engine Cadet Responses**

#### **a. Shipboard Training Services, Programs, and Policies**

Based on independent samples t-test, there is no significant difference between the perception of the respondents on shipboard training services, programs, and policies when grouped according to their course. This indicates that their perception on shipboard training services, programs, and policies does not change regardless if the respondent is an engine or deck cadet.

Both deck and engine cadet respondents in the study of Dimailig and Kim (2018) clearly show that practical or actual approach to their training onboard is the best method in this stage of their education. It means that a high percentage of cadets from deck and engine departments prefer a more active approach in their training than the passive learning way through lecture-based delivery.

#### **b. Challenges Onboard**

Both groups of trainees have common experiences and challenges during their onboard training. Some of the common experiences of both cadets from deck and engine during their onboard training are presented in the study of Desrosiers (2000), who compared the sea training programs of the three maritime universities- two from USA and one from Korea, and found out that in Massachusetts Maritime Academy, the cadets on the training ship of each department (deck & engine) are divided into three groups: Watchstanding, Training, and Maintenance/Utility. These groups consist of all cadets from all four grade levels. The groups are further divided into three watches: 00-04/12-16, 04-08/16-20, and 08-12/20-24. The day workers work in the different areas of the ship, such as galley and deck maintenance. The classroom group attends lectures and practice exercises to add to the knowledge and skills they are developing during the training cruise. Regardless of the rotation phase the students find themselves, they are still required to accomplish tasks that can only be performed on a ship, such as navigation.

### c. *Expectation on Shipboard Training*

In terms of the significant difference on the cadets' rating on their shipboard training experience against their expectations, the independent samples t-test indicates that there is no significant difference on the respondents' experiences on expectations on shipboard training between deck and engine cadets,  $t(160) = .552$ ,  $p = .582$ .

### d. *Confidence in Cadets' Ability*

The PMMA Shipboard Training Program primarily aims to "ensure progress of a cadet onboard vessels which is designated as a laboratory for learning the appropriate skills, and other proficiencies required of an officer to perform tasks for ships operations at sea and in port that adheres to safety and good seamanship" (PMMA Shipboard Training Program Manual). Given this, the cadets' confidence in their abilities must be developed.

Based on independent samples t-test, there is no significant difference between the respondents' confidence in the deck and engine cadets' ability,  $t(159.922) = -1.942$ ,  $p = 0.054$ .

### e. *Over-all Training Program Provided Onboard*

The PMMA, through its shipping partners, strives hard to ensure that the onboard training experience of cadets is satisfactory and compliant with the basic requirements of the Administration as a requirement set by the STCW Convention.

In terms of the respondents' over-all training provided onboard, there is no significant difference between the deck and engine cadets' perception,  $t(159) = 1.202$ ,  $p = .231$ . This implies that the respondents' course does not affect their over-all training perception. This is likely because both groups of respondents had common activities onboard, wherein they have developed soft skills as revealed in their performance report of their training record book. These soft skills are clustered in four areas of competences (self-awareness, self-management, social awareness and relationship management) (Cabas & Tancinco, 2016).

## IV. CONCLUSION

The following are concluded based on the findings:

1. Most of the cadets did their onboard training on bulk carriers, tankers, and container vessels. These were facilitated by different crewing companies, i.e. Crossword, Fleet Management Limited, Cargo Safeway, Fair Shipping Inc., Manila Shipments and Manning Inc., Odjfell Philippines Inc., Alpha Marine Services Inc., among others. The top ten principals

include Golden Union Marine Services, Latsco Marine Management, Odjfell Philippines Inc., Fairshipping, FJL, Crossworld, UMMS, and Zeaborn Ship Management. Most of the cadets went aboard two vessels to complete their 12-month onboard training and were in a mixed-nationality crew that includes Chinese, Korean, Greek, Indian, Croatian, Polish, Russian, Ukrainian, Burmese, Ghanaian, Romanian, Taiwanese, Vietnamese, Norwegian, Malaysian, Japanese, and Turkish.

2. All cadet-respondents agree that the services, programs and policies on shipboard training program are well implemented by the shipping as their response ranges from agree to strongly agree.
3. Both sets of respondents have high to very high rating on the provision of training tasks, but the deck cadets perceived them to be higher than that of the engine cadets, which is credited to the technical nature of the engine tasks that require high supervision of officers.
4. The cadet-respondents have experienced from very low to low the pre-identified challenges, with sexual and verbal harassment and abuse as the lowest. This shows that they have positive onboard experience.
5. Most of the deck- and engine-cadet respondents have expectations that were fairly met. This shows that, although they were given high opportunities to work onboard, it was not enough in terms of time and having no dedicated training officer to train and monitor them. The result is in congruence with their self-rated confidence after the training. Over-all, however, they still rated their onboard training as good to excellent.
6. There is no significant relationship between the length of shipboard training and the provision of shipboard training tasks. On the other hand, there is a significant negative relationship between the type of vessel and nature of crew relative to the provision of tasks for engine and deck cadets, respectively.
7. There is no significant difference in the perceptions of the deck and engine cadets in terms of partner shipping companies' shipboard training services, programs, and policies; challenges onboard; expectations; confidence and over-all onboard training program provided. This means that being a deck or engine cadet did not affect their responses.

## V. RECOMMENDATION

Based on the foregoing, the following are recommended:

1. Maintain cooperation and strong alliance with the international shipping companies to ensure continuous

partnership in the onboard training of the cadets and cadettes. It is, however, recommended to strengthen the monitoring in the completion of the 12-month shipboard training program. Moreover, it is important to provide multi-cultural sensitivity training for the cadets/cadettes as they are exposed to mixed crew.

2. Continue strengthening the GAD-related training of the cadets/cadettes as they are to become future officers. This will allow their subordinates and trainees to experience the same positive environment they had, with very minimal challenges.
3. The Department of Shipboard Training (DST) can negotiate through a policy regarding possible the time allotment per task to allow the trainees to experience all tasks. Further, the Colleges should ensure that the cadets/cadettes will have a thorough hands-on simulator training. This can increase their attainment of expectations and improve confidence.
4. The DST should also include in the Memorandum of Agreement that shipping companies assign a dedicated onboard training officer during the duration of the shipboard training in order to monitor the performance of the shipboard trainees. Further, DST could also create a training program activity which may be included in the MOA.
5. The DST must have close coordination with the shipping company's onboard training officer to find out if the needs of the cadets are being addressed in terms of shipboard training program implementation. Accordingly, an electronic-TRB (eTRB) may also be developed to monitor the progress and activities of the cadets onboard.
6. The DST must include a skill-based assessment of the cadets related to the desired shipboard competency.
7. The DST must review and revise, as necessary, the current shipboard training policy and procedures to include the recommended policies in this study.

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