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Research Article

Development of Competency Manual for the Philippine Coast Guard (PCG) Commanding Officers

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ABSTRACT

The study emphasized the importance for effective leadership in the Philippine Coast Guard (PCG) and introduces the development of a specialized Competency Manual tailored for PCG Commanding Officers, guided by the Dreyfus model of skills acquisition. While effective leadership is vital for maritime safety and security, the absence of a structured competency framework poses challenges for PCG Commanding Officers, impeding their adaptability and effectiveness in rapidly evolving maritime environment. The development process encompassed a thorough needs assessment, which included reviewing PCG regulations, competency frameworks, and conducting a comprehensive analysis of the Dreyfus model. Collaborative efforts with subject matter experts, surveys, and pilot testing involving PCG officers played a pivotal role in refining the content of the manual. The result of the study yields a Competency Manual that meticulously defines specific competencies, knowledge, skills, and behaviors deemed essential at each stage of the Dreyfus model. Covering critical areas such as maritime regulations, navigation, decision-making, leadership, and crisis management, the manual precisely caters to the unique demands placed on PCG Commanding Officers. The Competency Manual stands out as a structured and progressive tool for skill development, ensuring that PCG Commanding Officers are well-prepared to navigate the difficult challenges inherent in their roles. Effective implementation that entails the seamless integration of the manual into PCG's training programs, conducting routine assessments, and establishing channels for continuous improvement. This strategic approach seeks to foster the development of PCG Commanding Officers into highly proficient leaders, empowering them to adeptly protect maritime interests in the Philippines.

Keywords: Behaviors, Competencies, Competency Manual, PCG Commanding Officer, Decision-making, Dreyfus Model of Skills Acquisition, Effective Leadership, Knowledge, Skills, Maritime Regulations, Navigation

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Introduction

The development of the PCG Commanding Officer Competency Manual is driven by the importance to define and document essential skills, knowledge, and behaviors required for effective leadership within the Philippine Coast Guard Vessel's management and operational setting. It covers competencies such as maritime operations, safety protocols, crisis management, communication, and interpersonal skills, considering evolving regulatory and technological changes. The manual aims to ensure that PCG Commanding Officers are well-prepared and competent in their roles.

Presently, candidates for PCG Commanding Officers must meet specific qualifications and undergo a rigorous evaluation process by the Command-At-Sea Board. Despite these stringent requirements, incidents involving PCG vessels have occurred, leading to significant financial losses. These have emphasized the importance of well-trained and competent Commanding Officers to prevent such incidents and mitigate their impact (PCG, 2013).

Acknowledging the challenges faced by the PCG in safeguarding the nation's waters and enhancing its capabilities through modernization efforts, the introduction emphasizes the need to elevate the competencies of Commanding Officers. The Department of Transportation's support further underscores the importance of skilled officers to manage the increasing assets effectively (PCG, 2022).

The development of the Competency Manual is presented as a response to the evolving demands on Commanding Officers, incorporating a Knowledge, Skills, and Attitude (KSA) Framework (Badea et al., 2015) aligned with commercial ship captains' standards. The manual draws on best practices from both PCG and commercial sectors, aiming to set higher standards for PCG Commanding Officers.

The primary goal of this study is to develop a comprehensive competency manual specifically designed for Philippine Coast Guard (PCG) Commanding Officers, aiming to address the essential knowledge, skills, and abilities crucial for the effective and efficient execution of their duties. The study undertakes specific research-related objectives, including the assessment of the competence levels of PCG Officers with

Junior Ranks in critical areas such as Safety Awareness, Performance and Sedulity, Technical and Practical Knowledge, Internal-External Communication Skills, and Leadership (Şaban et al., 2019).

Moreover, the study seeks to identify and compare the competencies required of both Commercial Ship's Captains and PCG Commanding Officers, focusing on key dimensions such as Safety Awareness, Performance and Sedulity, Technical and Practical Knowledge, Internal-External Communication Skills, and Leadership. A comprehensive understanding of these competencies will provide valuable insights into aligning PCG Commanding Officers' skills with industry standards.

Additionally, the research aims to investigate the challenges faced by Ship Captains and PCG Commanding Officers in acquiring the necessary competencies. This investigation will contribute valuable information on the barriers and hurdles in competency development within the maritime sector.

Guided by the research findings, the study endeavors to develop a tailored competency manual. This manual will serve as a strategic guide to enhance the competencies of PCG Commanding Officers, addressing identified gaps and incorporating industry best practices. The ultimate purpose is to equip PCG Commanding Officers with the necessary skills and knowledge to fulfill their roles effectively, ensuring the safety and security of the country's waters.

The significance of the manual is underscored by its potential to benefit PCG Commanding Officers by providing guidance and benchmarking their competencies against commercial ship captains. It is expected to enhance the overall competence of PCG Commanding Officers, aligning them with industry standards and minimizing the occurrence and impact of incidents involving PCG vessels. Ultimately, the manual addresses the critical need for capable Commanding Officers to protect government assets and contribute to the safety and security of maritime operations.

Methods

In this part, the researcher provided a detailed explanation of the methods and

techniques employed in this study. This encompasses the research design, participant selection or respondents of the study, ethical considerations, instrumentation, instrument validation, procedures for data collection, and data analysis.

Research Design

This research seeks to develop a competency manual for empowering commanding officers who were and would be stationed in PCG and PCG Manned Vessel using mixed method descriptive type of research.

Mixed method descriptive research is an approach that combines both quantitative and qualitative research methods to provide a comprehensive understanding of a research problem. This type of research design is particularly useful when investigating complex phenomena that cannot be adequately captureded by using only one research method. The quantitative component of the research provides statistical analysis and numerical data, while the qualitative component provides in-depth insights into the experiences and perspectives of the participants (VOXCO, n.d.).

In the development of a competency manual for PCG Commanding Officers, mixed method descriptive research (Dawadi et al., 2021) can be used to gather both quantitative and qualitative data on the current roles and responsibilities of PCG Commanding Officers, the required competencies for the position, and feedback on the proposed competency manual. This can help to provide a comprehensive understanding of the knowledge, skills, and attitudes required for effective performance in the position.

Respondents of the Study

For the development of a competency manual for PCG Commanding Officers, respondents were purposely selected to participate in the study. To be included, they need to:

For PCG Junior Officers:

1. be currently assigned at Coast Guard Fleet aboard PCG and PCG Manned Vessel;
2. had finished Junior Ship Operational Level Course (JSOLC);

3. be currently performing as Mess and Supply Officer or Deck and Gunnery Officer in the Deck Department;
4. be currently performing as Damage Control Officer or Engineering Officer in the Engineering Department; and
5. have at least one-year minimum tenure of sea duty experience aboard PCG or PCG Manned Vessel.

For PCG Executive Officers

1. be currently assigned at Coast Guard Fleet aboard PCG and PCG Manned Vessel;
2. had finished Senior Ship Management Level Course (SSMLC);
3. be currently performing as Executive Officer aboard PCG and PCG Manned Vessel;
4. be a sea-service badge holder; and
5. have at least three-year minimum tenure of sea duty experience aboard PCG or PCG Manned Vessel.

For PCG Commanding Officers:

1. be currently assigned at Coast Guard Fleet aboard PCG and PCG Manned Vessel;
2. had finished tour of duty as Executive Officer;
3. be deliberated and passed in the Initial Command at Sea Board deliberation;
4. have at least four-years and six months' minimum tenure of sea duty experience aboard PCG or PCG Manned Vessel; and
5. be currently performing as Commanding Officer of PCG and PCG Manned Vessel.

For PCG Command-At-Sea Badge Holder

1. be an active member of the PCG;
2. successfully commanded PCG or PCG Manned Vessel;
3. be a Command-At-Sea Badge Holder; and
4. have at least six-years minimum tenure of sea duty experience aboard PCG or PCG Manned Vessel;

For Commercial Ships Captain

1. possessed a Master Mariner's license;
2. successfully commanded and operated commercial vessels; and
3. have at least ten-years minimum tenure of sea duty experience aboard Commercial Vessel.

A total of 289 participants, comprising PCG Officers (156 Junior Officers, 39 Executive Officers, 39 Commanding Officers, and 55 Command at Sea Badge Holders), along with 50 Commercial Ships Captains, took part in the study. The overall respondent count amounted

to 282. The adequacy of this respondent number for the study was determined using an online sample size calculator, considering a 95% confidence level and a 5% margin of error, as outlined below:

Table 1. List of Respondents

Particular	Population	Respondents
Junior Officer	156	112
Executive Officer	39	36
Commanding Officer	39	36
Command-At-Sea Badge Holder	55	48
Commercial Ships Captain	--	50
TOTAL		282

Ethical Considerations

Throughout the study, the researcher took steps to address ethical considerations, including privacy and anonymity. Respondents were provided with an informed consent form, outlining the study's purpose, procedures, financial considerations, potential benefits, and the confidentiality of their data or results. By signing the form, respondents affirmed their voluntary participation and were informed of their right to withdraw from the study at any time.

Furthermore, the researcher ensured the originality of the study by confirming that the works cited were not plagiarized and accurately represented the researcher's understanding and words. In-text citations and a reference list were included to appropriately credit other authors, emphasizing a commitment to academic integrity and the prevention of plagiarism or improper use of others' work in this research. Additionally, the researcher addressed Turnitin results to ensure that the content adhered to ethical writing standards and originality requirements.

Instrumentation

To answer the research questions, the following instruments were used:

Survey Questionnaire

A self-made survey questionnaire was used to gather data on the profile of the respondents that include their highest educational attainment, licenses earned, number of years of sea

duty experience, number of Years as Commanding Officer / Ships Captain, specialization course or training taken. This approach aimed to capture detailed information about the educational qualifications, professional experiences, and training backgrounds of the participants in the study.

To measure the level of competence of PCG Officers with Junior Ranks in terms of Safety Awareness, Performance and Sedulity, Technical and Practical Knowledge, Internal-External Communication Skills, and Leadership, the researcher also crafted a structured survey questionnaire, organizing sections for each competency area. This questionnaire incorporated Likert scale questions, allowing respondents to quantify their self-assessment of competence levels within each specified area.

Interview Questionnaire

An interview questionnaire was developed and administered to PCG Commanding Officers, Command-At-Sea Badge Holder PCG Officers, and Commercial Ships Captain to collect information regarding the respondents' profiles, encompassing details such as; highest educational attainment, licenses earned, number of years of sea duty experience, number of Years as Commanding Officer / Ships Captain, specialization course or training taken. This approach aimed to capture detailed information about the educational qualifications, professional experiences, and training backgrounds of the participants in the study.

Its structure involved probing questions exploring into the competencies crucial for their respective roles, specifically honing in on Safety Awareness, Performance and Sedulity, Technical and Practical Knowledge, Internal – External Communication Skills, and Leadership. The interview questions also gathered data on the challenges encountered by Ship Captains and PCG Commanding Officers in acquiring the required competencies.

Validation of Instrument

The instruments of the study were validated, as follows:

Survey Questionnaire

Validating a survey questionnaire is an essential step in ensuring the accurate measurement of intended competencies. This process entails several key steps. Firstly, the researcher prepared a clean draft of the questionnaire for validation, an expert review is conducted, where the questionnaire is shared with subject matter experts for feedback on clarity, relevance, and comprehensiveness. The validator received the clean draft of the survey questionnaires along with a letter requesting validation and the validation tool instrument for this proposal.

To ensure the reliability of the questionnaires, they were administered to a group of 30 individuals who were not part of the main study's respondents. This group comprised of 20 Coast Guard personnel who were not ship captains and 10 DepEd Teachers. The researcher has used Cronbach Alpha (?? for reliability test.

The result for reliability test using Cronbach Alpha for Safety Awareness was 0.91894217, for Performance and Sedulity was 0.92998478, for Technical and Practical Knowledge was 0.94099327, for Internal and External Communications was 0.9322373 and for Leadership was 0.9322373. The results indicate that the prepared guide questionnaires were reliable. The general rule of thumb is that a Cronbach's alpha of .70 and above is good, .80 and above is better, and .90 and above is best (Statistics Solution, n. d.).

Interview Questionnaire

Validating the interview questionnaire for this study "Development of Competency Manual for PCG Commanding Officers involved a systematic process. Initially, subject matter experts, including experienced PCG Commanding Officers, review the questionnaire for question clarity, relevance, and appropriateness. Expert feedback is sought, and suggestions are incorporated to refine the questionnaire.

Following the expert review, pilot testing is carried out with a small group of PCG Commanding Officers not involved in the main study. Their responses are carefully observed and recorded to identify any uncertainties or confusing elements. Feedback is collected on the overall structure and flow of the interview, and modifications are made based on this pilot test feedback to improve clarity and effectiveness.

Data Gathering Procedure

To gather data from the respondents, the following procedures were followed:

Survey Questionnaire:

The initial step in the data gathering process involved the researcher seeking permission from relevant authorities to conduct the study. Subsequently, the researcher sent a formal request, including the survey questionnaires, to the purposively selected respondents. The delivery method employed for the survey questionnaires utilized both email and Google Forms. Respondents, upon receiving the survey, provided written consent by signing, indicating their willingness to participate in the study. Considering the geographical diversity of the respondents, sufficient time was allocated for them to respond. Completed survey questionnaires were then returned to the researcher for data collection. The received data were methodically combined, encoded, and analyzed to draw meaningful insights.

Interview Questionnaire:

Similarly, the researcher began the data gathering process for the interview questionnaire by seeking permission from relevant authorities and obtaining approval for the study.

Following this, the researcher formally requested participation from the purposively selected respondents, including the interview guide questions. The delivery method for the interview questionnaire involved utilizing email and Google Forms. Respondents, upon receipt of the interview guide questions, expressed their consent in writing, signifying their agreement to participate in the study. Due to the geographical dispersion of respondents, ample time was provided for their responses. Completed interview guide responses were collected, and the received data underwent a thorough process of combination, encoding, and analysis to extract valuable information.

Data Analysis

To present the results for the problem, the researcher had used a combination of descriptive statistics, and thematic analysis. The outline for presenting the results were as follows:

1. Level of Competence of PCG Officers with Junior Ranks:
 - Descriptive statistics (e.g., mean, standard deviation) for each competency area (safety awareness, performance and sedulity, technical and practical knowledge, internal-external communication skills, and leadership)
2. Competencies Required of Commercial Ship's Captain and PCG Commanding Officers:
 - Thematic analysis of data gathered from literature review and interviews with ex-

perts to identify the key competencies required of a commercial ship's captain and PCG Commanding Officers

3. Challenges Encountered in Acquiring Required Competencies:
 - Thematic analysis of data gathered from interviews with PCG officers and experts to identify the challenges encountered in acquiring the required competencies
4. Competency Manual for PCG Commanding Officers:
 - A summary of the key findings from the previous sections that can enlighten the development of a competency manual for PCG Commanding Officers

Results and Discussion

This part presents the detailed results and discussion regarding the development of a competency manual for PCG Commanding Officers. It presents the findings and analyses obtained through online survey and interview.

Assessment of the Competence Level of PCG Officers with Junior in Ranks

The study assessed the competence of junior-ranking PCG Officers, focusing on their proficiency in key areas such as safety awareness, performance and sedulity, technical knowledge, communication skills, and leadership. Scores range from 1 (Novice) to 5 (Expert) (CABEM's Competency Manager, 2021), with qualitative descriptions attached to each mean score.

Table 2. Level of Competence of the PCG Officers with Junior in Ranks

Competency Areas	Mean	VI
Safety Awareness	4.14	Proficient
Performance and Sedulity	3.94	Proficient
Technical and Practical Knowledge	3.78	Proficient
Internal-External Communication Skills	3.79	Proficient
Leadership	4.01	Proficient
OVERALL	3.93	Proficient

Legend: 4.50 – 5.00 — Expert; 3.50 – 4.49 — Proficient; 2.50 – 3.49 — Competent; 1.50 – 2.49 — Advanced Beginner; 1.00 – 1.49 — Novice; VI – Verbal Interpretation

Safety Awareness. PCG Officers demonstrate a high level of safety awareness with a mean average of 4.14, emphasizing safety as a top priority. They are proactive in maintaining

safety measures, avoiding shortcuts, and reporting hazards. They also respond positively to safety-oriented feedback.

The outcomes of the current study present a contradiction to the research conducted by Jung and Ming (2021), specifically in their investigation entitled "Examining Perceptual Differences in Maritime Safety Climate: A Case Study of Korean Seafarers." In Jung and Ming's study, it was found that the safety awareness of seafarers engaged in domestic vessel operations exhibited relatively low levels, particularly in relation to safety indicators such as the reporting system.

Performance and Sedulity. PCG Officers excel in ensuring safe operational practices, handling rescue operations, and managing complex information. They exhibit proficiency in operating ship-to-shore radios and adapting to new technology systems. While slightly lower, their competence in vessel operations but still proficient gaining an average mean of 3.94.

The result of the study resembles to the study conducted Yuen, Kum Fai, et al. (2018) which explores the relationship between job satisfaction and performance among seafarers, highlighting key factors such as stress, rewards, job design, and individual dispositions. These factors are interconnected and contribute to the broader theme of performance and sedulity, highlighting the interconnected factors that contribute to the commitment and effectiveness of seafarers in their maritime responsibilities.

Technical and Practical Knowledge. PCG Officers stay updated with industry advancements, foster technical development among colleagues, adhere to recognized standards, respond effectively to dynamic demands, produce high-quality work, and provide expert guidance that lead them to have an average mean of 3.78.

The study aligns with research conducted by Praetorius G. P. et al. (2022), emphasizing the evolving role of non-technical skills (NTS) or practical skills alongside traditional technical skills in the maritime skillset. This highlights the crucial nature of mariners' ability to apply both technical and non-technical skills for ensuring the safe operation of merchant vessels.

Internal-External Communication Skills.

PCG Officers create positive work environments, communicate complex concepts clearly, adapt their communication styles, engage in active listening, and excel in external communication. They build strong relationships with stakeholders which resulted an average mean of 3.79.

The findings of this study are in harmony with the research conducted by Dacwag, Caroline (n. d), which underscores that Filipino seafarers, including those in shipboard training demonstrate communicative competence. Notably, Filipino seafarers attained the highest mean score in creating communications with another culture, a result that can be linked to their diverse racial background.

Leadership. PCG Officers excel in creating positive work environments, aligning group goals with the organization's vision, conveying confidence, embracing innovation, nurturing talent, seeking input for improvement, and defining clear group goals leading to an average mean of 4.01.

The result of the study is closely related to the study conducted by Cho and Kao (2022) which emphasized the importance of a positive organizational climate in fostering shared values, group cohesion, and individual commitment, ultimately contributing to the stimulation of organizational citizenship behavior (OCB.) The results indicate that the transformational leadership and organizational climate interact positively, influencing individual OCB through the additive effect of organizational commitment.

Overall, PCG Officers demonstrate proficiency with an overall average mean of 3.93 in various domains, contributing significantly to maritime safety, efficiency, and the organization's effectiveness within the industry. Their commitment to continuous improvement aligns with their mission of safeguarding life, property at sea, and protecting the marine environment. These findings reflect their solid competence, indicating their capacity to connect strategic objectives with everyday work and inspire confidence in overcoming challenges.

The overall findings align with the study conducted by Fan, L. (2020) which conclude that seafarers' competence plays a vital role in the safety of maritime navigation.

Competencies Required for Commercial Ship's Captain and PCG Commanding Officers

The competencies required for Commercial Ship's Captains and PCG Commanding Officers were identified through interviews with informants, covering key areas crucial for effective performance:

Safety awareness involves rigorous preparedness, effective communication, navigational excellence, emergency response competency, continuous improvement, and collaboration.

Performance and sedulity include leadership, communication, thorough planning, data-informed decision-making, continuous improvement, stakeholder management, and risk assessment.

Technical and practical knowledge encompasses understanding vessel systems, navigation safety, regulatory compliance, document management, communication, leadership, preventive maintenance, and continuous learning.

In terms of **internal-external communication skills**, competencies involve managing communication infrastructure, active listening, cross-cultural communication, feedback integration, crisis management, and adaptability and growth mindset.

Leadership competencies encompass strategic planning, delegation skills, resilience and adaptability, acknowledgment, motivation, continuous improvement, teamwork, and collaboration.

These competencies collectively form the foundation for a comprehensive competency manual, preparing future PCG Commanding Officers for maritime excellence, safety, and operational efficiency.

Challenges Encountered by Ship Captains and PCG Commanding Officers in Acquiring the Required Competencies

PCG Commanding Officers and Ship's Captains encounter various challenges in developing essential competencies, including technical,

logistical, cultural, and interpersonal obstacles. These challenges encompass issues related to complex technical systems, logistical coordination difficulties, navigating diverse cultural contexts, and managing interpersonal relationships within their teams. Despite these multi-faceted challenges, both groups remain dedicated to identifying solutions and implementing effective strategies to foster growth and improvement within their respective areas of expertise.

Ship Captains face several significant challenges in acquiring the essential competencies required for their roles in maritime operations. To begin with, the demanding nature of their job, characterized by long working hours and extensive responsibilities, leaves them with limited time for training and professional development. This time constraint hinders their participation in crucial competency-enhancing activities. Additionally, balancing administrative duties with competency development is a complex challenge, requiring precise time management to allocate dedicated hours for skill improvement amidst administrative demands. Access to training resources is another obstacle, with geographical constraints making it difficult to access hands-on training facilities, time limitations due to round-the-clock duties, financial constraints for expensive training programs, limited availability of maritime-specific training, and the complexity of meeting regulatory compliance standards. These challenges collectively impact Ship Captains' efforts to enhance their competencies within the maritime industry.

PCG Commanding Officers face a range of unique challenges as they work to acquire the essential competencies vital for their roles within the PCG Organization. These challenges include resource constraints, where limited budgets hinder training and competency development. High operational demands demand flexibility and adaptability, making it challenging to allocate time for training. Navigating regulatory changes and compliance issues requires meticulous record-keeping and can be overwhelming. Personnel turnover disrupts training continuity and team cohesion, and access to training facilities can be hindered by remote locations. Additionally, interagency

coordination complexities arise from differences in protocols and information sharing among various government agencies and organizations involved in maritime operations. Despite these challenges, PCG Commanding Officers remain committed to excellence in their maritime responsibilities.

Competency Manual of the study

The Competency Manual discussed in the study is like a guidebook designed specifically for PCG (Philippine Coast Guard) Commanding Officers. This manual is a much-needed guidebook to help them navigate through the different challenges they encounter in the Philippine seas, like managing ship traffic, conducting search and rescue operations, protecting the environment, and enforcing the law. This manual is not just a rulebook; it is a structured guide that helps commanding officers build up the knowledge, skills, and qualities they need to excel in their tough jobs. It puts a strong emphasis on things like safety, security, leadership, and being adaptable to change. This manual is a way for the PCG to show how serious they are about being professionals and being the ones who make sure everything in our seas is safe and secure. It is not just a one-time guide; it is always getting better and changing to make sure Commanding Officers can handle any new challenges that come their way. In short, it is a crucial tool that helps the PCG stay strong and keep our seas safe.

Conclusion

The research affirms that PCG Officers with junior ranks demonstrate commendable proficiency in safety awareness, performance, technical and practical knowledge, internal and external communication skills, and leadership. Their commitment to safety, effective task execution, technical proficiency, and strong interpersonal and leadership abilities contribute significantly to operational success. To sustain this positive route, continuous safety training, technical learning opportunities, and leadership development support are essential, ensuring their continued contributions to maritime safety and operational efficiency.

Both Commercial Ship's Captains and PCG Commanding Officers share key competencies

critical for ensuring maritime safety and operational excellence. The study emphasizes the importance to develop a tailored competency manual, drawing insights from experienced professionals of PCG Commanding Officers and Commercial Ships Captain. The identified competencies highlight the necessity for a comprehensive manual focusing on safety awareness, performance, technical knowledge, communication skills, and leadership abilities. Themes such as rigorous preparedness, effective communication, risk management, and continuous improvement are paramount.

PCG Commanding Officers face distinct challenges, including limited resources and a busy workload. The study highlights the need for a tailored Competency Manual to address these challenges explicitly. This manual will offer a structured framework for developing and enhancing knowledge, skills, and attributes crucial for their roles in the complex Philippine maritime environment. Emphasizing safety, security, leadership, and adaptability, the manual reflects the PCG's commitment to professionalism and ongoing growth. Its development and implementation are pivotal for empowering PCG Commanding Officers and reinforcing maritime safety and security efforts in the Philippines. Regular updates will ensure alignment with industry standards, fostering adaptability and proficiency amid the ever-evolving maritime landscape. The collaborative efforts of stakeholders, regulatory bodies, and maritime organizations will be crucial in overcoming challenges and promoting safer maritime operations, ultimately upholding the professionalism of Ship Captains and PCG Commanding Officers.

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