

**English for Maritime Purposes: Developing an STCW-Aligned SMCP Training Framework****Dr. Ouafa OUARNIKI <sup>(1)</sup>**

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**Abstract**

Efficient communication is widely recognized as the backbone of safe seafaring and effective performance. Miscommunication between crew members, ships, and shore-based agencies can lead to accidents, delays, and even loss of life. To mitigate such risks, the International Maritime Organization (IMO) mandated the Standard Marine Communication Phrases (SMCP), providing a standardized vocabulary to reduce ambiguity. However, mere familiarity with SMCP is insufficient; formal training is required to ensure correct and consistent application in both routine operations and emergency situations. This article therefore proposes a modular SMCP training framework aligned with STCW standards. The model is designed to equip mariners with competence and confidence in precise, economical communication by integrating theoretical instruction, practice exercises, role-play, and rigorous assessment, culminating in an internationally recognized certification. Incorporating SMCP into STCW-approved training programs enables shipping companies and maritime institutions to enhance safety, minimize human error, and improve operational efficiency within multicultural crews.

**Keywords:** SMCP; Maritime Communication; STCW; Training Frameworks; Safety at Sea.

### الملخص

تُعَدّ الاتصالات الفعّالة ركيزة أساسية للملاحة البحرية الأمانة والأداء السليم. فحالات سوء الفهم بين أفراد الطاقم أو بين السفن والوكالات الساحلية يمكن أن تؤدي إلى حوادث أو تأخيرات أو حتى فقدان أرواح بشرية. ومن أجل الوقاية من هذه المخاطر، وضعت المنظمة البحرية الدولية (IMO) عبارات الاتصالات البحرية القياسية (SMCP) باعتبارها معجماً دولياً يهدف إلى تقليل احتمالات سوء الفهم. غير أنّ مجرد الإلمام بهذه العبارات لا يكفي، بل يتطلب الأمر تدريباً رسمياً يمكن الملاحين من استخدامها بشكل صحيح وموحد في العمليات الروتينية وكذلك في حالات الطوارئ. وفي هذا السياق، يقترح هذا المقال مخططاً تدريبياً معيارياً في SMCP وفقاً لمعايير اتفاقية STCW. وقد صُمم هذا النموذج خصيصاً لتزويد الملاحين بالكفاءة والثقة في التواصل البحري الفعّال والاقتصادي. كما يجمع بين التعليم النظري، التمارين التطبيقية، لعب الأدوار، ونظم اختبار صارمة تؤدي في مجموعها إلى شهادة معتمدة عالمياً. ومن خلال إدماج SMCP ضمن برامج التدريب المعترف بها من قبل STCW، تصبح المؤسسات البحرية و الأكاديمية قادرة على تحقيق مستويات أعلى من السلامة، وتقليل نسبة الخطأ البشري، وتعزيز كفاءة التشغيل ضمن طواقم متعددة الثقافات.

الكلمات المفتاحية: عبارات الاتصالات البحرية القياسية (SMCP)، الاتصالات البحرية، اتفاقية STCW، أطر التدريب، السلامة في البحر.

## 1. Introduction

Maritime operations are a complex interlink, where different departments, ships, and shore authorities coordinate with each other. Therefore, effective and accurate communication is not a matter of choice but is a safety requirement in sea travel. To be precise, accidents and their reports always indicate that miscommunication is the root cause of accidents, operational delay, and loss of lives (International Maritime Organization [IMO], n.d.; Ahmed, 2013). Human factors remain central to shipping safety, with communication breakdowns identified as a core element (Hetherington, Flin, & Mearns, 2006). Due to this, effective communication measures are required to minimize risks and maximize maritime operations.

The IMO developed the Standard Marine Communication Phrases (SMCP) to mitigate these problems. In particular, SMCP offers a uniform collection of succinct and brief phrases to be used in navigation, emergency situations, and normal onboard operations (IMO, 2001). Mastering these phrases is not enough to ensure safety, though, as seafarers must be trained to apply them correctly in real contexts.

In addition, incorporating SMCP training into the Standards of Training, Certification, and Watchkeeping (STCW) standards not only adheres to international standards but also improves mariners' efficiency in operations. Through this, shipping companies and maritime institutions are not only able to produce technically efficient operation staff

but also communicative staff, and such a crew is vital in avoiding accidents as well as achieving maximum overall efficiency (IMO, n.d.; Farjami, 2024).

Consequently, in this paper a modular STCW-compliant SMCP model of training is proposed to equip mariners with the knowledge, functional skills, and confidence to communicate clearly, effectively, and safely no matter the type of ship or crew makeup.

### **1.1 The Purpose of the Study**

The general objective of this study is to investigate the role played by Standard Marine Communication Phrases (SMCP) training in the maximization of safety of operations and effectiveness of communication in the shipping sector. Specifically, the paper seeks to:

1. Assess the function of SMCP in reducing miscommunication and attaining clearness in sea operations.
2. Discuss the training centers and mariners' problems in making effective use of SMCP.
3. Outline the shortcomings of integrating SMCP training within STCW-compliant systems of disseminating global standardization and compliance.
4. Evaluate the effectiveness of innovative training methodologies — e.g., scenario-based training, simulation, and technology-facilitated tools—on enhancing SMCP skill level among mariners.
5. Suggest a modular SMCP training framework for providing mariners with the knowledge, skills, and confidence they need to apply standardized communication in practice environments.

### **1.2 Research Questions**

In line with the above objective, the current research is underpinned by the following research questions:

1. How effective is SMCP training at enhancing communication effectiveness and operational safety of mariners?
2. What are the biggest challenges and hindrances that prevent the proper use of SMCP in maritime education and training?

3. How can SMCP be incorporated in STCW-approved training courses in a regular manner to facilitate international consistency of practice of communication?
4. What is the potential part that may be played by contemporary training techniques, such as simulation and technology training, in preparing mariners to implement SMCP?
5. Would the structure of an SMCP training system be like a module to build communications skills and confidence among mariners working in a diversity of multicultural environments?

## **2. Review of Literature**

### ***2.1 Importance of Standardized Maritime Communication***

Maritime activities need good communication since miscommunication may lead to accidents, delays, and hazards to the environment. IMO developed SMCP as words standardization with the aim of reducing misunderstandings between ships and shore-based stations (IMO, 2001). As noted by Baylon and Santos (2011), the introduction of SMCP has been vital for safeguarding life at sea by minimizing misunderstandings in multilingual crews. Standard words applied in ship-to-ship, as well as ship-to-shore communication, reduce miscommunication by a great extent, particularly where multilingual settings exist (MITAGS, n.d.).

SMCP application guarantees operational safety by creating a common linguistic ground. Standard communication was discovered to improve crew coordination, minimize human error, and guarantee adherence to global safety standards (Ahmed, 2013; Farjami, 2024). Maritime personnel can communicate safely without error through SMCP application, hence minimizing operation hazards significantly.

### ***2.2 Problems in SMCP Application***

Yet questions persist over whether SMCP should be seen as an end in itself or simply a tool for achieving safer operations (Trenkner, 2002). Despite common usage, issues still exist in actual application of SMCP. Communication failures caused by misuse and inadequate training of seafarers were identified by Farjami (2024). Moreover, the absence of standardization of the level of training at maritime academies impairs the efficiency of SMCP in reality (Pritchard & Kalogjera, 2018).

Resistance to change and mandatory compliance with established communication forms can

render initiating SMCP unfeasible. Those used to informal patterns, like the senior staff, will not be able to adapt to formal communications, and the functioning of a maritime system requires constant adjustment of SMCP to changing demands (Schröder, 2010). All these problems prove the necessity for periodic formal training to apply SMCP in practice.

### ***2.3 STCW Standards Compliance***

The STCW Convention provides global standards for training for the maritime field. Incorporation of SMCP into STCW-compliant systems ensures that seafarers are trained in communication skills to global standards, adhering to global conventions (IMO, 2001). Maritime English IMO Model Course 3.17 offers curriculum standards for incorporating SMCP and stresses standardization of maritime communications through training (IMO, n.d.).

Adherence to the STCW standards also solves the problem of linguistic diversity of seafarers. Through standard communication procedures, the shipping industry can avert language barriers that are common precursors to accidents. Moreover, STCW-based SMCP training enables consistency and quality among maritime training institutions in terms of having one level of competence for seafarers globally (IMO, n.d.; Farjami, 2024).

### ***2.4 Training Methodologies and Effectiveness***

Effective SMCP training adopts scenario-based, practical approaches. Ahmed (2013) found that well-structured, programmatic programs using exercises and real-case scenarios significantly contribute to the improvement of seafarers' communicational competency, reducing misunderstandings as well as improving safety at sea. Practical training materials such as the International Maritime Language Programme (IMLP) have also been developed to improve competence (Van Kluijven, 2010).

Technology also enables new opportunities for SMCP training. Simulation technology and electronic learning systems possess a practice area where mariners can practice communication, replicate operating conditions, and receive trained responses to changing maritime needs. Combining these technologies with traditional learning models fills out programs that prepare mariners to address real requirements (Wu & Zhao, 2016).

### ***2.5 Future Directions and Technology Advances***

Artificial intelligence, academic platforms and virtual reality simulation are revolutionizing SMCP training. Virtual reality allows seafarers to experience high-risk scenarios in a virtual setup, while artificial intelligence systems provide personalized feedback on one's performance according to individual learning needs (Wu & Zhao,2016; Chen & Sun, 2019).

As there is growing complexity in shipping operations, there is a necessity to embrace technological innovation in SMCP training. This serves to ensure seafarers gain knowledge, skills, and confidence to communicate effectively in multicultural, dynamic maritime environments (MaritimeTrainer.com, 2025).

### ***3. Methodology***

#### ***3.1 Research Design***

The present study applies a design-based conceptual research methodology to develop a systematic training model for Standard Marine Communication Phrases (SMCP) in line with STCW requirements. The model is constructed through the amalgamation of theoretical knowledge distilled from research studies, optimal maritime communication protocols, and worldwide recommendations (Ahmed, 2013; Farjami, 2024). The aim is not to apply or empirically validate the framework at the current moment but to provide a holistic and functional blueprint that can be used as a guideline for forthcoming training schemes in shipping organizations and maritime academies.

#### ***3.2 Participants / Target Audience***

The theoretical framework is intended for:

1. Maritime students undergoing study in academies,
2. Working seafarers, particularly bridge officers and watchkeeping crew, and
3. Maritime teachers who oversee STCW-approved courses.

#### ***3.3 Data Sources and Collection***

The model is grounded on:

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- **Literature Review:** Report on IMO publications, STCW conventions, and recent research on SMCP training and ship-to-shore communication (IMO, 2001; MITAGS, n.d).
  - **Case Studies:** Examination of maritime accidents caused by communication failures to identify practical training needs.
  - **Expert Consultation:** Feedback from maritime educators and instructors on the relevance and feasibility of the proposed modules.

The approach is supplemented with pre- and post-training assessment processes, scenario-based simulation, and STCW-standard certification. Such evaluation strategies are suggested to be implemented in the future but have yet to be pilot tested in practice.

### ***3.4 Limitations***

- No empirical testing: No piloting of the model amongst mariners in training or working-at-sea seafarers.
- Theoretical basis: Guidance is based on literature, case studies, and professional opinion, rather than witnessed outcomes.
- Contextual variability: Effectiveness may vary depending on the resources of the institution, crew composition, and local training practices.
- Availability of technology: There is a requirement for availability of high-tech machines in VR- and AI-based simulation, and this will not be feasible for all shipping training schools.

Despite such limitations, the model is one that can be taken up as a framework model for designing SMCP training programs and makes reasonable recommendations about potential eventual empirical testing and application in practice.

### ***4. Proffered SMCP Training Model (Model for Future Use)***

Following the conceptual framework, the current research suggests a modular SMCP training model as a template for shipping companies and maritime institutions. As not empirically validated, it includes literature best practices, IMO instructions, and subject matter expert suggestions.

According to Table 1, there are five interrelated modules within the model, and each is designed to tackle certain competencies of maritime communication:

- 1- Every module increasingly relies on the previous module in that trainees set core knowledge prior to developing skills under regular and emergency situations.
- 2- The design is meant to be a flexible one that adapts to local resources, technology levels, and crew makeup.
- 3- While structured and well-developed, this system is a theoretical model that has been proposed but not yet tested or piloted.

**Table 1. Proposed SMCP Training Framework for Mariners Aligned with STCW Standards**

| Module                                                                                                                    | Objectives                                                                                                                                                    | Content / Topics                                                                                                             | Activities / Exercises                                                   | Assessment Methods                                     |
|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------|
| <b>Module 1:<br/>Introduction to<br/>SMCP &amp;<br/>Maritime<br/>Communication<br/>Principles (Blue –<br/>Foundation)</b> | -Trainees acquire core knowledge of SMCP purpose and scope<br><br>- Recognize importance of clear communication -<br>Identify common communication breakdowns | - History & development of SMCP (IMO, 2002) - Maritime communication principles -<br>Common errors in maritime communication | - Interactive lectures - Case study analysis -<br>Role-playing exercises | - Quizzes on terminology -<br>Participation evaluation |

|                                                                                                               |                                                                                                        |                                                                                                                           |                                                                                                                   |                                                                                                   |
|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Module 2: SMCP for Navigation &amp; Routine Operations (Green – Routine Operations)</b>                    | - Apply SMCP in daily operations - Communicate effectively with crew, other vessels, shore authorities | - Navigation & maneuvering phrases - Bridge operation communication protocols - Multilingual crew language considerations | - Simulated bridge exercises - Ship-to-ship / ship-to-shore drills - Group exercises on correct/incorrect phrases | - Observation of simulation exercises - Written comprehension assignments                         |
| <b>Module 3: SMCP for Emergency &amp; Safety-Critical Situations (Red – Emergency / High-Stakes)</b>          | - Use SMCP under high-pressure situations - Apply emergency communication procedures                   | - SMCP for alarms, distress, collision, fire, man-overboard - Standardized reporting & assistance requests                | - Crisis simulations & emergency drills - Role-play scenarios - Peer & instructor feedback                        | - Practical performance in simulations - Oral/practical exams                                     |
| <b>Module 4: Technology-Enhanced SMCP Training (Orange – Technology / Innovation)</b>                         | - Use digital tools & simulations - Develop adaptive communication skills                              | - Simulation software for bridge ops - E-learning modules - Virtual reality maritime scenarios                            | - VR-based bridge simulations - Interactive online exercises - AI-powered personalized feedback                   | - Simulation performance reports - Online scenario-based tests - Personalized instructor feedback |
| <b>Module 5: Assessment, Certification &amp; Continuous Improvement (Purple – Certification / Evaluation)</b> | - Evaluate overall proficiency - Ensure STCW compliance - Promote continuous learning                  | - Assessment criteria per IMO/STCW - Feedback & improvement mechanisms - International                                    | - Comprehensive written & practical exams - Peer & instructor feedback - Refresher / advanced scenario exercises  | - Summative evaluation (written, oral, practical) - Certification issuance - Continuous           |

|  |  |                             |  |                           |
|--|--|-----------------------------|--|---------------------------|
|  |  | certification<br>procedures |  | performance<br>monitoring |
|--|--|-----------------------------|--|---------------------------|

### 5. Discussion

Communication failures are part of broader human and organizational errors that frequently underlie maritime accidents (Grabowski & Roberts, 1997). The proposed SMCP training model is a direct reaction to recurring issues identified in previous studies and IMO reports. In fact, communication weaknesses are still the most endemic reason for maritime incidents, such as collisions, groundings, and delay of operation (Ahmed, 2013; Farjami, 2024). Thus, by providing a formalized set of standard sentences, the system effectively reduces the risks of miscommunication, especially in multicultural and multilingual crew settings where miscommunication is most prone to occur (MITAGS, n.d.). Besides, the modular approach ensures competence is built incrementally and systematically.

Module 1 initially provides seafarers with the theoretical foundations they need, wherein seafarers do not merely memorize sentences but are also exposed to explanations, context, and application of SMCP. Conceptual knowledge is vital since a grasp of the concept results in improved long-term retention and effective application. Subsequently, Modules 2 and 3 transition from routine operations to emergency and safety-critical contexts, which reflect pedagogical research showing that scenario-based training significantly improves the ability to perform competently under pressure (Wu & Zhao, 2016). In this sense, the framework encourages learners from knowledge acquisition to performance-based competence, thereby aligning with the components of experiential learning.

Furthermore, the inclusion of technology-based learning support in Module 4 enhances pedagogical value. Virtual reality simulation, AI feedback, and communicative e-learning modules are practical and simulate high-stakes situations in controlled and safe environments. These interactive and simulation learning environments advance higher learning, retention, and knowledge transfer to real operations, as has been validated through recent training studies (Ahmed, 2013). Moreover, these tools enable repeated exposure to rare but critical scenarios, such as distress communications, which is essential for fostering preparedness and confidence among mariners.

Nevertheless, despite its advantages, the framework is not without limitations. First and foremost, it must be acknowledged that the proposed model has not yet been empirically implemented or tested with real maritime trainees. Hence, its true value is still at the theoretical and conceptual level. Second, while high-tech integration like AI and VR improves the quality of training, the technology might not be accessible to all maritime academies, especially in developing countries where infrastructural and financial capital are scarce. Third, while SMCP is intended to provide a worldwide common communication system, diversity in cultures and languages among crews could create difficulties in take-up. As noted by Farjami (2024), not only technical competence but also sensitivity to cross-cultural patterns of communication flows is required for successful implementation.

Despite the above limitations, inclusion of Module 5 on assessment, certification, and continuous improvement offers an explicit provision to ensure STCW compliance and ongoing training gain. By introducing repeated assessments, formal feedback, and access to refresher training, the system creates a cycle of ongoing professional development. It not only equips mariners with the ability at any point but also keeps them continuing to develop their communications skills over the course of their careers.

In short, the framework offers a broad, flexible, and modular SMCP training model. Though empirical validation through pilot studies and field trials is still needed, it already constitutes a useful benchmark for maritime academies, shipping organizations, and regulatory authorities. By confronting theoretical knowledge step by step with subsequent practice, emergency preparedness, technological advancement, and ongoing vigilance, the model constitutes an important step in refining the communication safety and operating efficiency in the maritime sector.

## ***6. Conclusion***

Clear communication is the foundation of maritime safety and operational efficiency. The model of STCW-compliant SMCP training outlined above presents a standardized and modular system to train mariners to possess the desired knowledge, practical skills, and assurance to communicate effectively in normal and emergency circumstances.

With its combination of foundation teaching, scenario-based simulation, technology-based simulation, and continuous testing, the model addresses solutions to foundation issues in the literature, including miscommunication, linguistic diversity, and inconsistency in training quality (Ahmed, 2013; Farjami, 2024; MITAGS, n.d.).

Although the framework is not yet functional, it offers a conceptual model for shipping companies and maritime academies to develop standard communication training programs. Finally, the application of such a model can optimize safety, reduce operating risks, and maximize overall maritime staff competency without compromising international STCW regulation and IMO guideline adherence.

## **7. Recommendations**

### **7.1 Integration into Maritime Curriculum:**

- \* The new modular SMCP training framework should be incorporated into STCW-approved maritime academy training programs.
- \* Theoretical teaching and simulation training should be integrated to facilitate full skill mastery.

### **7.2 Installation within Shipping Companies**

- \* Ongoing SMCP training must be delivered to bridge officers and watchkeeping officers.
- \* Electronic learning tools, simulation technology, and virtual reality must be utilized for practice communication skills development.

### **7.3 Assessment and Certification:**

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\* Periodic written, oral, and practical examinations must be carried out to determine trainees' competency.

\* The certification must be issued as per STCW-compliant standards, and refresher training must be held at regular intervals for continued proficiency.

#### **7.4 Pilot Testing and Empirical Evaluation**

\* The system should be pilot tested with maritime students and seafarers to test its effectiveness.

\* Trainee and instructor feedback should be solicited and reviewed for the aim of updating the exercises and modules.

\* Effects of technology-based training devices must be evaluated in realistic operational environments.

#### **7.5 International Cooperation and Standardization:**

\* Maritime schools need to exchange best practices and resources for SMCP training so that the quality of training is consistent.

\* Regional, institutional, and linguistic context adaptation guidelines need to be created.

#### **7.6 Continuous Improvement:**

\* Sustained effectiveness is to be achieved by ongoing monitoring of the trainees' performance and program outcomes.

\* Progressive scenario exercises and technology-enhanced training need to be carried out to address changing operational issues.

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