



Perceptions of VTS Operators on the Implementation of Standard Marine Communication Phrases at Benoa Vessel Traffic Service

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Abstract. Effective communication between Vessel Traffic Service (VTS) operators and vessels is a critical element in ensuring maritime safety, particularly in busy international shipping routes. Standard Marine Communication Phrases (SMCP), developed by the International Maritime Organization (IMO), provide a standardized communication framework to minimize misunderstanding caused by linguistic and cultural differences among seafarers. This study aims to investigate the perceptions of VTS operators regarding the implementation of SMCP at Benoa Vessel Traffic Service, Indonesia. A mixed-method research approach was employed involving eleven VTS operators with working experience ranging from three to more than ten years. Quantitative data were collected through a five-point Likert scale questionnaire, while qualitative data were obtained through semi-structured interviews. The questionnaire data were analyzed using descriptive statistical analysis, and interview findings were analyzed thematically. The results indicate that Benoa VTS operators have a highly positive perception of SMCP implementation. Operators consider SMCP effective, practical, and useful in supporting clear communication with vessels, particularly foreign ships. The findings also reveal that operators have a high level of understanding of SMCP procedures. However, several challenges remain, including differences in foreign crew accents, speaking speed, interpretation issues, and technical communication disturbances. This study concludes that SMCP contributes significantly to improving communication effectiveness and supporting maritime safety. Continuous training and exposure to various maritime communication situations are recommended to maintain and improve operators' competency in applying SMCP.

Keywords: *Perception, VTS Operators, Standard Marine Communication Phrases, Maritime Communication, Navigation Safety*

1. INTRODUCTION

Effective communication is one of the fundamental components in ensuring safe and efficient maritime operations. In the shipping environment, communication between

vessels and shore-based authorities, particularly Vessel Traffic Service (VTS) operators, plays an essential role in monitoring vessel movements, providing navigational information, and preventing maritime accidents (IMO, 2002).

Benoa Vessel Traffic Service (VTS), located in Bali, Indonesia, has a strategic function in supporting safe navigation within the Indonesian Archipelagic Sea Lanes (ALKI) II. This route serves as one of the main international maritime routes connecting the Pacific Ocean and Indian Ocean. Due to its strategic position, ALKI II experiences significant vessel traffic involving both domestic and international vessels. Approximately 100 vessels pass through ALKI II daily. Operational records from Benoa VTS on 2 July 2024 indicated that 83 vessels were operating within the ALKI II area between 07.00 and 19.00 local time, including 23 foreign vessels (Directorate General of Sea Transportation, 2020).

The high density of vessel traffic requires reliable communication between VTS operators and vessels. Inadequate communication may lead to misunderstanding, delayed decision-making, and increased risk of maritime incidents. The importance of effective maritime communication has been emphasized by the International Maritime Organization (IMO), which recognizes communication failure as one of the contributing factors in maritime accidents. Therefore, clear, concise, and standardized communication procedures are required to support safe navigation (IMO, 2020).

To address communication challenges in international shipping, IMO introduced the Standard Marine Communication Phrases (SMCP) as a standardized maritime language for communication between ships, between ships and shore-based services, and among crew members onboard. SMCP aims to reduce ambiguity and improve mutual understanding among maritime professionals from different linguistic backgrounds (IMO, 2002).

The implementation of SMCP is particularly important in VTS operations because VTS operators frequently communicate with vessels from various countries with different cultural and language backgrounds. The use of standardized phrases helps operators deliver navigational information, traffic instructions, and safety messages more accurately.

SMCP has several characteristics that distinguish it from general English communication. These include the avoidance of unnecessary synonyms, the use of standardized expressions, the limitation of complex grammatical structures, the provision of complete answers to yes/no questions, and the preference for clear and authoritative expressions suitable for maritime operations (Ryoo, 2017).

Despite the importance of Standard Marine Communication Phrases (SMCP), previous studies indicate that its implementation in Vessel Traffic Service (VTS) communication remains inconsistent. Sarinten et al. (2020) found that SMCP had been used by VTS operators under the Tanjung Priok Navigation District, including VTS Tanjung Priok and VTS Merak, particularly in communication initiation and termination, repetition requests, traffic information exchange, and the use of message markers. However, the study also reported that SMCP was not applied consistently in all ship-to-shore communications.

Similarly, Fauzi et al. (2016, as cited in Sarinten et al., 2020) reported that some ship crews operating within the VTS area of Soekarno-Hatta Makassar Port had not fully applied IMO-prescribed SMCP procedures, phrases, and sentence structures. These findings suggest that although SMCP plays an important role in improving maritime

communication practices, its practical implementation still requires further strengthening through training, supervision, and consistent operational use.

However, limited studies have examined VTS operators' perceptions regarding SMCP implementation, particularly at Benoa VTS, which operates within one of Indonesia's strategic maritime routes. Therefore, this study aims to analyse the perceptions of Benoa VTS operators regarding the implementation of SMCP and identify challenges encountered during its application.

2. METHODOLOGY

This study employed a mixed-method research approach by combining quantitative and qualitative methods to obtain a comprehensive understanding of VTS operators' perceptions regarding the implementation of Standard Marine Communication Phrases (SMCP) at Benoa Vessel Traffic Service. The research was conducted at Benoa VTS, Bali, Indonesia. The participants consisted of eleven VTS personnel, including VTS managers, supervisors, and operators who were directly involved in maritime communication activities with vessels operating within the VTS area. The respondents had working experience ranging from three to more than ten years, providing relevant operational experience in applying SMCP during vessel traffic management activities. Quantitative data were collected using a structured questionnaire consisting of several indicators related to SMCP implementation, including perceived effectiveness, understanding of SMCP procedures, and difficulties encountered during communication with vessels. The questionnaire used a five-point Likert scale ranging from very ineffective to very effective and from very low to very high understanding.

To support and validate the quantitative findings, semi-structured interviews were conducted with selected VTS operators. The interviews focused on operators' experiences, challenges, and opinions regarding the practical implementation of SMCP when communicating with domestic and international vessels. The quantitative data were analysed using descriptive statistical analysis by calculating frequencies and percentages. Meanwhile, qualitative data obtained from interviews were analysed using thematic analysis to identify recurring themes related to the benefits and challenges of SMCP implementation.

3. DISCUSSION

3.1 Operators' Perceptions of SMCP Effectiveness

One of the main objectives of this study was to investigate VTS operators' perceptions regarding the effectiveness of SMCP in facilitating communication with foreign vessels. The indicators measured included the ability of SMCP to minimize misunderstanding, ease of communication, flexibility in different operational situations, and its role in overcoming language barriers.

The results demonstrate that Benoa VTS operators have a highly positive perception of SMCP effectiveness. As shown in Table 1, six respondents (54.55%) categorized SMCP as "very effective," while five respondents (45.45%) considered it "effective." No respondents selected moderate, ineffective, or very ineffective categories. Table 1 shown operators' perceptions.

Table 1. Operators' Perceptions of SMCP Effectiveness in Facilitating Communication with Foreign Vessels

Category	Frequency	Percentage (%)
Very Effective	6	54.55
Effective	5	45.45
Moderate	0	0.00
Ineffective	0	0.00
Very Ineffective	0	0.00
Total	11	100.00

The findings indicate that all respondents recognize SMCP as an effective communication tool in supporting interaction between VTS operators and vessel crews. This result is particularly significant considering that Benoa VTS operates within ALKI II, where vessels from various countries with different linguistic backgrounds frequently navigate.

The effectiveness of SMCP can be attributed to its standardized expressions that provide clear and concise communication procedures. By using predetermined phrases, operators and ship crews can reduce ambiguity and avoid unnecessary interpretation during communication exchanges.

These findings support the objective of SMCP established by the International Maritime Organization (IMO), which aims to improve maritime safety by minimizing communication errors caused by differences in language proficiency and cultural background among seafarers.

Furthermore, the findings confirm that standardized maritime communication contributes to improved situational awareness. In the VTS environment, where operators must provide timely traffic information and navigational guidance, the use of SMCP assists operators in delivering messages accurately and efficiently.

3.2 Operators' Understanding of SMCP Procedures

Understanding SMCP procedures is a fundamental factor influencing successful implementation. Although standardized phrases are available, effective communication depends on operators' ability to select and apply appropriate phrases according to operational situations.

The results reveal that Benoa VTS operators demonstrate a very high level of understanding of SMCP procedures. As presented in Table 2, ten respondents (90.91%) were categorized as having a "very high" level of understanding, while one respondent (9.09%) was categorized as "high." No respondents were classified in the moderate, low, or very low categories. Table 2 shown understanding of SMCP procedures.

Table 2. Operators' Understanding of SMCP Procedures

Category	Frequency	Percentage (%)
Very High	10	90.91
High	1	9.09
Moderate	0	0.00
Low	0	0.00
Very Low	0	0.00

Total	11	100.00
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The high level of understanding demonstrates that Benoa VTS operators possess adequate competency in applying SMCP during operational communication. This competency is essential because VTS operators are required to exchange safety-related information with vessels accurately and without delay.

The findings may be related to the professional training and certification programs undertaken by VTS personnel. SMCP is commonly included as an important component in maritime communication training, allowing operators to develop familiarity with standardized expressions before applying them in real operational situations.

In addition, continuous exposure to international vessel traffic strengthens operators' practical skills. Regular communication with foreign vessels provides opportunities for operators to maintain their proficiency and adapt to various maritime communication conditions.

3.3 Challenges in Implementing SMCP

Although operators demonstrated positive perceptions and high understanding of SMCP, several challenges were identified during implementation. Based on questionnaire responses and interview results, operators generally considered SMCP easy to implement. However, communication barriers still occurred in certain situations.

The questionnaire results showed that seven respondents (63.64%) categorized SMCP implementation as “easy,” two respondents (18.18%) considered it “very easy,” and two respondents (18.18%) perceived it as “fairly easy.” No respondents reported difficult or very difficult implementation conditions. Table 3 shown level of difficulties.

Table 3. Level of Difficulty in Implementing SMCP at Benoa VTS

Category	Frequency	Percentage (%)
Very Easy	2	18.18
Easy	7	63.64
Fairly Easy	2	18.18
Difficult	0	0.00
Very Difficult	0	0.00
Total	11	100.00

Interview findings revealed several challenges, including foreign crew accents, speaking speed, differences in interpretation, and technical communication disturbances. Accent variation was identified as the most common challenge. Since many vessels operating in ALKI II originate from countries with different first languages, differences in pronunciation, intonation, and stress patterns sometimes affect message comprehension. Even though communication follows SMCP standards, variations in spoken English may influence the clarity of information exchange.

Another challenge is speaking speed. Some vessel crews communicate too quickly, causing operators to request repetition or clarification. Therefore, controlled speaking speed remains an important factor in ensuring effective maritime communication.

Technical communication problems, such as radio interference and equipment disturbances, were also reported as factors affecting communication quality. Although these problems are not directly related to SMCP, they may reduce the effectiveness of standardized communication procedures.

Overall, the findings indicate that SMCP implementation at Benoa VTS has been effective. Nevertheless, continuous improvement through regular training, exposure to various international accents, and enhancement of communication facilities is required to maintain reliable maritime communication.

4. CONCLUSION

This study examined VTS operators' perceptions regarding the implementation of Standard Marine Communication Phrases (SMCP) at Benoa Vessel Traffic Service. The findings demonstrate that operators have a highly positive perception of SMCP implementation in supporting communication with foreign vessels.

The study reveals that SMCP is considered an effective communication tool because it provides standardized expressions that improve clarity, reduce misunderstanding, and support information exchange between VTS operators and vessels from different linguistic backgrounds. Furthermore, Benoa VTS operators demonstrate a very high level of understanding of SMCP procedures, indicating that training, certification, and operational experience contribute significantly to effective implementation.

Despite these positive findings, several challenges remain, particularly related to foreign crew accents, speaking speed, interpretation differences, and technical communication disturbances. These challenges show that maritime communication effectiveness depends not only on standardized phrases but also on human competence and supporting communication facilities.

The contribution of this study is the identification of VTS operators' perspectives regarding SMCP implementation within the ALKI II operational environment. The findings highlight that strengthening maritime communication competency through continuous training and practical exposure is essential to support safer and more efficient vessel traffic management.

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