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| IALA Guideline |

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VTS VHF VOICE COMMUNICATION Procedures

Edition 1.0

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# INTRODUCTION

Effective VTS VHF communications directly contribute to navigational safety and efficiency, conversely ineffective communication contribute to near misses and accidents. Effective communication is therefore an essential part of VTS personnel’s duties. However, there remains inconsistent approaches to VHF procedure between personnel, VTS authorities and training establishments. The 2012 IALA VTS Symposium in Istanbul recognised the need to produce a new stand-alone document related to VTS communication in order to facilitate clear and unambiguous phrases.

The maritime industry comprises of personnel originating from many different parts of the world. Although a considerable number of maritime personnel are native English speakers, the distribution of non-native English speakers are considerably high and expected to rise in the future. This guideline is relevant to both native and non-native personnel. VTS personnel even between native English speakers

The 2012 VTS symposium recognised that there is an increasing awareness, public perception of, and expectation for, VTS. This places an enhanced degree of accountability on maritime administrations and their subsequent management of VTS.

VTS personnel are never speaking to an individual pilot, master or seafarer. They are speaking to the entire bridge team and other vessels on the VTS channel whose backgrounds, experience, and knowledge will vary. A VTS Operator or Supervisor are therefore consistently talking to everybody on the VTS VHF channel and should therefore speak in a procedural manner at all times.

When interacting in a conventional environment humans have many aims such as being liked, friendly and popular amongst others. However, as a VTS operator or supervisor, there must be only one aim and that is to give VHF communications the best possible chance of being understand.

# AIMS AND OBJECTIVES

This document is intended to engage and support all VTS personnel in promoting best practice in effective VTS radio voice procedure. It is a working document that is practical, limited in length and user friendly. The document is harmonised with other existing relevant documentation that provide communication guidance. It provides advice, that not only coaches new VTS personnel but guards against complacency with more experienced operators. The guideline aims to ensure a consistent approach between VTS personnel in communication procedure thereby increasing the chance of understanding between shore and ship.

# GROUND RULES

Research and experience suggests that a causal factor in many shipping accidents is the misunderstanding when speaking through VHF radio. The efficient use of the English language at sea is a key factor in ensuring safe and efficient navigation.

One of the main duties of VTS personnel is to collect, analyse and disseminate information. This task is during routine activities and in emergencies where the VTS personnel have to show skills and ability to work under pressure.

When people interact, they need to adjust their speech and vocal patterns in order to increase the likelihood of mutual understanding. These adjustments are ground rules that should be considered by all VTS personnel regardless of experience or native language whilst speaking on the VHF.

These ground rules are described under the following sections below; using VHF; compiling a message; delivering a message and interpreting a message.

## Plain Language

Plain language is a natural, spontaneous, and common form of language. Generally it is used when unexpected and emergency situations, that are not fully covered by the typical SMCP phraseology, are encountered. Therefore, the core linguistic features of plain language in radiotelephony communications (e.g. clarity, directness, intelligibility, and brevity) should be maintained at all times.

Plain language should be used for a wide range of routine and non-routine communicative VTS situations. From this perspective, the message structures and linguistic characteristics of plain language should be clear enough so that linguistic and cultural barriers posed to interlocutors could be resolved. It is aligned with the principles of SMCP which is designed for clear and concise VHF communication among speakers and listeners with different linguistic and cultural backgrounds.

In order to avoid an undesired misunderstanding in communications between personnel of different English and technical levels (e.g. understanding foreign language anxiety that a speaker at a lower language level expresses, different articulations in pronunciations, accents and intonation), mutual effort are required in using plain language.

Recent studies support the effects of plain language minimize ambiguity and increase clarity of the message being delivered. It is also reported that communication through plain language increases listeners understanding by at least 30%—and on some occasions by up to 90%.

## Cultural differences

Based on cultural experiences, assumptions and backgrounds could result in different situational awareness and linguistic perceptions on one specific situation. A lack of awareness of cultural differences could increase the possibility of making errors and lead to misunderstanding in communication.

When VTS personnel communicate between different cultures, special attention should be paid to the following:

* to disseminate any crucial information that, in the VTSO’s judgment, should be shared with navigating officers in order to make a common perception of potential danger regardless of how ‘obvious’ that information maybe;
* read-back technique should be used, especially when information provided by VTS includes, information that could be easily misunderstood such as numbers of persons on-board or information that would benefit others using the VTS area, instructions or advice.

# USING VHF

The correct use of radio equipment is essential if transmissions are to be successfully transmitted and received. Some considerations that VTS operators should keep in mind when using VHF equipment are:

a to only receive stronger signals.

Headset

The primary purpose of a headset is to reduce the noise in the surrounding work environment. The use of headset will aid concentration and the audibility of incoming calls but it may also hinder colleagues overhearing transmissions unless repeated through speakers.

1. Microphone

In order to ensure the communication quality, the microphone must be at the right position and distance to the operators mouth.

1. PTT (Push To Talk) Button
   1. There may be a delay in transmission after press pressing the PTT button, VTS personnel should pause briefly before passing their message in order to ensure that they whole message is transmitted.
   2. Ensure that the PTT button is held until the end of the message to avoid cutting off transmissions prematurely.
   3. Be sure that radio returns into the receive condition after communication.
2. Radio check
   1. Ensure that the correct frequency and aerial is in use.
   2. A radio check should be carried out regularly in order to test readability and the strength of signals as stated in SMCP.

**To request a radio check – “How do you read me?”**

**To respond to a radio check –**

**"I read you ...**

**bad/one with signal strength one (i.e. barely perceptible)**

**poor/two with signal strength two (i.e. weak)**

**fair/three with signal strength three (i.e. fairly good)**

**good/four with signal strength four (i.e. good)**

**excellent/five with signal strength five (i.e. very good)**

# COMPILING A MESSAGE

This section refers to the structure and content of VTS radio communications.

Before a VTS supervisor/operator transmits, he/she must take a moment to **think**. This may sound rather obvious, however, it is one of the principle errors personnel make. Native English speakers are particularly prone to this as they have the ability to respond immediately without needing time to translate a message received and/or construct a response. The aim is to give a considered response and construct messages in order not to give in to the natural pressure personnel put on themselves to respond quickly before they have had time to think.

To convey messages more clearly and understandably, one must also consider the following ground rules:

1. Structure
   1. Use of structure provides consistent message formulation and conveys a professional image to stakeholders. This technique also provides familiarity to the receiver, setting the tone of a safe and efficient VTS. VTS VHF communications should therefore be structured in order to give the best chance of understanding to the receiver and to keep the message as concise as possible:

**“Call sign (it may be useful to include the type of vessel if known) this is XXXX VTS**

**Message marker**

**Phrase**

**Over or Out”**

It is advised that a maximum of two message markers and two phrases are used in one transmission to avoid an over load on the recipient.

1. Each phrase should be preceded by a message marker (found in Annex A). There are many reasons
2. Content of the phrase
   1. Keep phrases short and simple:

The phrase should be to the point. filler wordsin a phraseThe most natural and intelligible order for English sentences is subject–verb–object. Keep the subject, verb, and object as near to one another as possible.

* 1. Each phrase should contain only one topic.
  2. Avoid hesitation sounds such as *‘ahhhhh, mmmmm, ehhhh’.*
  3. Information must be relevant, as accurate as possible and timely.
  4. Geographic locations - names used should be those on the chart or in Sailing Directions in use.

1. Use familiar, common and frequent words:
   1. The words listed in IMO’s SMCP should be considered for the content of phrases. In annex A SMCP is supplemented and emphasised with common phraseology.
   2. Choice of vocabulary is one of the most significant factors affecting clear and effective communication, specifically in multilingual environments and when dealing with stakeholders with a range of experience and knowledge.
   3. Words must be selected in a considered manner such that speakers with different English competencies can clearly catch the intended meaning. For example avoid technical, unusual, obscure, and lengthy words as well as regional colloquialisms.
2. Ambiguity is to be avoided. A VTS communication should be to the point and say precisely what it means. Some words in English have meanings depending on the context in which they appear.
   1. Conditional words are words such as may, might, should, can you, would you or could. Although they are not banned conditional words are to be used appropriately. If the VTS operator/supervisor means to imply choice then they can be used, however, if they are used in order to ‘sound’ polite then they should be avoided. For example ‘can you proceed on the starboard side of the channel’ should be transmitted as ‘proceed on the starboard side of the channel’ after the appropriate message marker. This removes the length and ambiguous nature of the transmission.
3. Make sentences positive rather than negative:
   1. Positive sentences are usually shorter and clearer because they generally use a single word in place of several (e.g., prohibited instead of not allowed) and are more straightforward (e.g., similar instead of not unlike).
   2. Without changing the intended meaning, positive sentences allow listeners to save time by reducing unnecessary mental work and conveying the point faster and more easily.
4. Spell out words and use individual numbers

To promote better understanding when using numbers or letters (names of buoys, stations, call signs, etc.), spell out words when deemed necessary using the tables defined in SMCP.

1. A fundamental principle of VTS communications is that advice and instructions should be ‘result oriented’. VTS should transmit the result they wish the vessel to achieve not the method of execution. The conduct of the vessel remains the responsibility of the master.

# VOCAL DELIVARY OF A MESSAGE

This section refers to vocal delivery techniques used in VTS radio communications.

When communicating orally using radio devices, exchanges must be professional, clear, concise and precise. In order to achieve an effective communication, the following steps should be considered.

## Preparation

1. Transmit when you are physically and mentally ready.
2. Listen out on the frequency to ensure that there will be no interference with a transmission from another station.

## Tone

The tone of the VTS operator’s voice is key. Research has concluded that how words are said are just as important as what words used. Transmissions should be sent with a tone of calm confidence, politeness and professionalism. Use of please, thank you etc makes a transmission slip into conversation and can make the message long. Therefore, it is advised that the tone of voice conveys politeness to the participant. For example even the use of ‘polite’ words can be received as impolite if sent with an aggressive tone. No matter if a VTS receive aggressive or even over familiar transmissions an operator/supervisor must always remain professional as these tones do nothing to add to navigational safety but may confuse either side of the conversation.

## Speech Rate

Speech rate is the speed at which a speaker conveys his or her message. On average, the speech rate of an adult English native speaker is reported to be between 150 and 190 words per minute (WPM).

Considering that speaking at a faster rate greatly hinders lower level English speakers’ comprehension and increases their language anxiety, modulating speech at a slower rate of around 120 WPM is highly recommended for clear and effective communication.

In emergency situations, a much slower rate of 100 WPM should be applied so important information can be clearly and accurately delivered under high-pressure and cognitively challenging conditions.

## volume

The volume of a transmission should be at a level used for normal conversation as shouting causes distortion and speaking too quietly could result in the message not being heard.

## Words grouping and pausing

1. Together with adjusting speech rate, one can employ word grouping and pausing strategies to increase his or her intelligibility in VTS communication. In other words, intelligibility can be enhanced considerably by dividing sentences into smaller groups of phrases according to a single unit of thought and by pausing briefly between word groups.
2. The effect of word grouping and pausing is specifically prominent for the following reasons:
   1. Speakers can moderate their speech rates by pausing between each word group.
   2. Pausing gives listeners time to process each pack of information delivered and for speakers to prepare subsequent information for delivery.
   3. Grouping and pausing contribute to the decreased use of unnecessary fillers like um, hm, and uh, which are reported to hinder mutual intelligibility.
3. Four words is generally recognised as the most intelligible unit of grouping and pausing for comprehensible and clear communication, and the division of units generally coincides with grammatical language structures.

## Nuclear stress

1. Nuclear stress is the most important part of the message, or keyword, that should be spoken slightly louder, longer, and higher than its neighbouring words (e.g. What PART of your vessel / is AGROUND?).
2. The voice should be pitched slightly higher than for normal conversation to improve clarity.

The placement of nuclear stress within a group of words plays a crucial role in the enhancement of intelligibility by helping listeners to catch the core meaning intended by a speaker in a more instant and direct manner.

# LISTENING

This section refers to the accurate interpretation of radio communications received by a VTS.

Interpretation of the message requires skills as the encoding process. Just as confusion can arise from errors in encoding, it can also arise from decoding errors especially during emergency situations. The use of radio device and internal/external factors could be reasons that influence the decoding procedures. In order to achieve effective communications a number of actions should be considered.

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## Influence of internal and external factors in receiving messages

Some factors such as feeling, health and mental state, culture, the work environmental should influence interpretation of the receiving calls

### Mental Preparedness

There are some causes, health and mental state, can contribute to this

### Distractions

Distractions could be caused by the lack of ability to concentrate; lack of interest; or the great intensity or attractiveness of something other than the object of attention. Distractions come from both external sources, and internal sources. External distractions include factors such as visual triggers, social interactions, background noise, music, internet and phone calls.

The physical working environment (temperature, ventilation, lighting, room dimensions, suitability of workstations, seating) if not properly set could cause loss of focus on communications. Multitasking and overload are distractions in situations requiring full attention. There are also internal distractions such as hunger, fatigue, illness, anxiety, and loss of concentration. Both external and internal distractions contribute to the interference of focus on the interpretation of incoming messages. VTS staff and authorities must be aware of distractions and should minimise them where possible in order to mitigate the negative effects of distractions in an operational environment.

# DEFINITIONS

The definitions of terms used in this IALA Guideline can be found in the International Dictionary of Marine Aids to Navigation (IALA Dictionary) at <http://www.iala-aism.org/wiki/dictionary> and were checked as correct at the time of going to print. Where conflict arises, the IALA Dictionary should be considered as the authoritative source of definitions used in IALA documents.

# ACRONYMS

IALA International Association of Marine Aids to Navigation and Lighthouse Authorities – AISM

IMO International Maritime Organization

PTT Push To Talk

SMCP Standard Marine Communication Phrases (IMO)

VHF Very High Frequency (30 MHz to 300 MHz)

VTS Vessel Traffic Services

VTSO Vessel Traffic Service Officer(s)

WPM Words per minute

# REFERENCES

1. Abcd
2. Efgh
3. Common Phraseology

Message Markers

(i) INSTRUCTION

This indicates that the following message implies the intention of the sender to influence others

by a Regulation.

Comment: This means that the sender, e.g. a VTS - Station or a naval vessel, must have the full

authority to send such a message. The recipient has to follow this legally binding

message unless s/he has contradictory safety reasons which then have to be reported

to the sender.

Example: "INSTRUCTION. Do not cross the fairway.”

(ii) ADVICE

This indicates that the following message implies the intention of the sender to influence others

by a Recommendation.

Comment: The decision whether to follow the ADVICE still stays with the recipient. ADVICE

does not necessarily have to be followed but should be considered very carefully.

Example: "ADVICE. (Advise you) stand by on VHF Channel six nine."

(iii) WARNING

This indicates that the following message implies the intention of the sender to inform others about

danger.

Comment: This means that any recipient of a WARNING should pay immediate attention to

the danger mentioned. Consequences of a WARNING will be up to the recipient.

Example: "WARNING. Obstruction in the fairway."

(iv) INFORMATION

This indicates that the following message is restricted to observed facts, situations, etc..

Comment: This marker is preferably used for navigational and traffic information, etc..

Consequences of INFORMATION will be up to the recipient.

Example: "INFORMATION. MV Noname will overtake to the West of you ."

(v) QUESTION

This indicates that the following message is of interrogative character.

Comment: The use of this marker removes any doubt on whether a question is being asked or

statement being made, especially when interrogatives such as What, Where, Why,

Who, How are additionally used at the beginning of the question. The recipient is

expected to return an answer.

Example: "QUESTION.( What is ) your present maximum draft?"

(vi) ANSWER

This indicates that the following message is the reply to a previous question.

Comment: Note that an answer should not contain another question.

Example: "ANSWER. My present maximum draft is zero seven metres."

Standby

Message received

Correction

Affirmative/ negative