

ASSEMBLY
20th session
Agenda item 9

RESOLUTION A.857(20)
adopted on 27 November 1997

GUIDELINES FOR VESSEL TRAFFIC SERVICES

THE ASSEMBLY,

RECALLING Article 15(j) of the Convention on the International Maritime Organization concerning the functions of the Assembly in relation to regulations and guidelines concerning maritime safety and the prevention and control of marine pollution from ships,

RECALLING ALSO resolution A.158(ES.IV) entitled "Recommendation on Port Advisory Services", resolution A.851(20) entitled "General Principles for Ship Reporting Systems and Ship Reporting Requirements, including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants" and resolution MSC.43(64) entitled "Guidelines and Criteria for Ship Reporting Systems",

BEARING IN MIND the responsibility of Governments for the safety of navigation and protection of the marine environment in areas under their jurisdiction,

BEING AWARE that vessel traffic services have been provided in various areas and have made a valuable contribution to safety of navigation, improved efficiency of traffic flow and the protection of the marine environment,

BEING ALSO AWARE that a number of Governments and international organizations have requested guidance on vessel traffic services,

RECOGNIZING that the level of safety and efficiency in the movement of maritime traffic within an area covered by a vessel traffic service is dependent upon close co-operation between those operating the vessel traffic service and participating vessels,

RECOGNIZING ALSO that the use of differing vessel traffic service procedures may cause confusion to masters of vessels moving from one vessel traffic service area to another,

RECOGNIZING FURTHER that the safety and efficiency of maritime traffic and the protection of the marine environment would be improved if vessel traffic services were established and operated in accordance with internationally approved guidelines,

HAVING CONSIDERED the recommendation made by the Maritime Safety Committee at its sixty-seventh session,

1. ADOPTS the Guidelines for Vessel Traffic Services and the Guidelines on Recruitment, Qualifications and Training of VTS Operators set out in Annexes 1 and 2 to the present resolution;
2. INVITES Governments to take account of the annexed Guidelines when developing, implementing and operating vessel traffic services;

3. RECOMMENDS Governments to encourage masters of ships navigating in areas for which vessel traffic services are provided to make use of such services;
4. REVOKES resolution A.578(14).

ANNEX 1

GUIDELINES AND CRITERIA FOR VTS

PREAMBLE

- 1 These Guidelines are associated with SOLAS Regulation V/8-2 and describe the principles and general operational provisions for the operation of a vessel traffic service (VTS) and participating vessels.
- 2 Contracting Governments should take account of these Guidelines when planning, implementing and operating vessel traffic services.
- 3 These Guidelines should be used in conjunction with the applicable Guidelines and Criteria for Ship Reporting Systems, resolution MSC.43(64) and the IALA VTS Manual.

1 DEFINITIONS AND CLARIFICATIONS

- 1.1 The following terms are used in connection with vessel traffic services:

.1 *Vessel traffic service (VTS)* - a service implemented by a Competent Authority, designed to improve the safety and efficiency of vessel traffic and to protect the environment. The service should have the capability to interact with the traffic and to respond to traffic situations developing in the VTS area.

.2 *Competent authority* - the authority made responsible, in whole or in part, by the Government for safety, including environmental safety, and efficiency of vessel traffic and the protection of the environment.

.3 *VTS authority* - the authority with responsibility for the management, operation and co-ordination of the VTS, interaction with participating vessels and the safe and effective provision of the service.

.4 *VTS area* - the delineated, formally declared service area of the VTS. A VTS area may be subdivided in sub-areas or sectors.

.5 *VTS centre* - the centre from which the VTS is operated. Each sub-area of the VTS may have its own sub-centre.

.6 *VTS operator* - an appropriately qualified person performing one or more tasks contributing to the services of the VTS.

.7 *VTS sailing plan* - a plan which is mutually agreed between a VTS Authority and the master of a vessel concerning the movement of the vessel in a VTS area.

.8 *VTS traffic image* - the surface picture of vessels and their movements in a VTS area.

.9 *VTS services* - VTS should comprise at least an information service and may also include

others, such as a navigational assistance service or a traffic organization service, or both, defined as follows:

.9.1 An information service is a service to ensure that essential information becomes available in time for on-board navigational decision-making.

.9.2 A navigational assistance service is a service to assist on-board navigational decision-making and to monitor its effects.

.9.3 A traffic organization service is a service to prevent the development of dangerous maritime traffic situations and to provide for the safe and efficient movement of vessel traffic within the VTS area.

.10 *Allied services* - services are services actively involved in the safe and efficient passage of the vessel through the VTS area.

.11 *Hazardous cargoes* - include:

.11.1 goods classified in the International Maritime Dangerous Goods (IMDG) Code;

.11.2 substances classified in Chapter 17 of the IMO International Code for Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC) Code, and in Chapter 19 of the IMO International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC) Code;

.11.3 oils as defined in MARPOL Annex I;

.11.4 noxious liquid substances as defined in MARPOL Annex II;

.11.5 harmful substances as defined in MARPOL Annex III; and

.11.6 radioactive materials specified in the Code for the Safe Carriage of Irradiated Nuclear Fuel, Plutonium and High Level Radioactive Wastes in Flasks on Board Ships (INF) Code.

2 GENERAL CONSIDERATIONS FOR VESSEL TRAFFIC SERVICES

2.1 Objectives

2.1.1 The purpose of vessel traffic services is to improve the safety and efficiency of navigation, safety of life at sea and the protection of the marine environment and/or the adjacent shore area, worksites and offshore installations from possible adverse effects of maritime traffic.

2.1.2 A clear distinction may need to be made between a Port or Harbour VTS and a Coastal VTS. A Port VTS is mainly concerned with vessel traffic to and from a port or harbour or harbours, while a Coastal VTS is mainly concerned with vessel traffic passing through the area. A VTS could also be a combination of both types. The type and level of service or services rendered could differ between both types of VTS; in a Port or Harbour VTS a navigational assistance service and/or a traffic organization service is usually provided for, while in a Coastal VTS usually only an information service is rendered.

2.1.3 The benefits of implementing a VTS are that it allows identification and monitoring of vessels, strategic planning of vessel movements and provision of navigational information and assistance. It can also assist in prevention of pollution and co-ordination of pollution response.

The efficiency of a VTS will depend on the reliability and continuity of communications and on the

ability to provide good and unambiguous information. The quality of accident prevention measures will depend on the system's capability of detecting a developing dangerous situation and on the ability to give timely warning of such dangers.

2.1.4 The precise objectives of any vessel traffic service will depend upon the particular circumstances in the VTS area and the volume and character of maritime traffic as set forth in 3.2 of these Guidelines and Criteria.

2.2 Responsibilities and liability

2.2.1 Where two or more Governments have a common interest in establishing a VTS in a particular area, they should develop a co-ordinated vessel traffic service on the basis of an agreement between them. Where a co-ordinated vessel traffic service is established, it should have uniform procedures and operations.

2.2.2 In planning and establishing a VTS, the Contracting Government or Governments or the competent authority should:

- .1 ensure that a legal basis for the operation of a VTS is provided for and that the VTS is operated in accordance with national and international law;
- .2 ensure that objectives for the VTS are set;
- .3 ensure that a VTS authority is appointed and legally empowered;
- .4 ensure that the service area is delineated and declared a VTS area; where appropriate, this area may be subdivided in sub-areas or sectors;
- .5 determine the type and level of services to be provided, having regard to the objectives of the VTS;
- .6 establish appropriate standards for shore- and offshore-based equipment;
- .7 ensure that the VTS authority is provided with the equipment and facilities necessary to effectively accomplish the objectives of the VTS;
- .8 ensure that the VTS authority is provided with sufficient staff, appropriately qualified, suitably trained and capable of performing the tasks required, taking into consideration, the type and level of services to be provided and the current IMO Guidelines on the recruitment, qualifications and training of VTS operators given in Annex 2;
- .9 establish appropriate qualifications and training requirements for VTS operators, taking into consideration the type and level of services to be provided;
- .10 ensure that provisions for the training of VTS operators are available;
- .11 instruct the VTS authority to operate the VTS in accordance with relevant IMO resolutions;
- .12 establish a policy with respect to violations of VTS regulatory requirements, and ensure that this policy is consistent with national law. This policy should consider the consequences of technical failures, and due consideration should be given to extraordinary circumstances that result.

2.2.3 In operating a VTS the VTS authority should:

- .1 ensure that the objectives of the VTS are met;

- .2 ensure that the standards set by the competent authority for levels of services and operators qualifications and equipment are met;
- .3 ensure that the VTS is operated in conformity with relevant IMO resolutions;
- .4 ensure that the VTS operations are harmonized with, where appropriate, ship reporting and routing measures, aids to navigation, pilotage and port operations;
- .5 consider, where appropriate, the participation of the pilot both as a user and provider of information;
- .6 ensure that a continuous listening watch on the designated radio frequencies is kept and that all published services are available during the operational hours of the VTS;
- .7 ensure that operating procedures for routine and emergency situations are established;
- .8 in a timely manner, provide mariners with full details of the requirements to be met and the procedures to be followed in the VTS area. This information should include the categories of vessels required or expected to participate; radio frequencies to be used for reporting; areas of applicability; the times and geographical positions for submitting reports; the format and content of the required reports; the VTS authority responsible for the operation of the service; any information, advice or instructions to be provided to participating ships; and the types and level of services available. This information should be published in the appropriate nautical publications and in the "World VTS Guide".*

2.2.4 The liability element of an accident following compliance with VTS guidance is an important consideration which can only be decided on a case-by-case basis in accordance with national law. Consequently, a VTS authority should take into account the legal implications in the event of a shipping accident where VTS operators may have failed to carry out their duty competently.

2.2.5 Contracting Governments should ensure that ships flying their flag comply with the requirements of vessel traffic services. Those Contracting Governments which have received information of an alleged violation of a VTS by a ship flying their flag should provide the Government which has reported the offence with details of any appropriate action taken.

2.3 VTS services

The following guidance concerning the services that are rendered by a VTS should be taken into account:

2.3.1 The *information service* is provided by broadcasting information at fixed times and intervals or when deemed necessary by the VTS or at the request of a vessel, and may include for example reports on the position, identity and intentions of other traffic; waterway conditions; weather; hazards; or any other factors that may influence the vessel's transit.

2.3.2 The *navigational assistance service* is especially important in difficult navigational or meteorological circumstances or in case of defects or deficiencies. This service is normally rendered at the request of a vessel or by the VTS when deemed necessary.

2.3.3 The *traffic organization service* concerns the operational management of traffic and the forward planning of vessel movements to prevent congestion and dangerous situations, and is

*Refer to MSC Circular 586 on the IALA/IAPH/IMPA World VTS Guide.

particularly relevant in times of high traffic density or when the movement of special transports may effect the flow of other traffic. The service may also include establishing and operating a system of traffic clearances or VTS sailing plans or both in relation to priority of movements, allocation of space, mandatory reporting of movements in the VTS area, routes to be followed, speed limits to be observed or other appropriate measures which are considered necessary by the VTS authority.

2.3.4 When the VTS is authorized to issue instructions to vessels, these instructions should be result-oriented only, leaving the details of execution, such as course to be steered or engine manoeuvres to be executed, to the master or pilot on board the vessel. Care should be taken that VTS operations do not encroach upon the master's responsibility for safe navigation, or disturb the traditional relationship between master and pilot.

2.3.5 A VTS area can be divided into sectors, but these should be as few as possible. Area and sector boundaries should not be located where vessels normally alter course or manoeuvre or where they are approaching areas of convergence, route junctions or where there is crossing traffic. VTS centres in an area or sector should use a name identifier. The boundaries should be indicated in the appropriate nautical publications and in the "World VTS Guide".¹

2.4 Communication and reporting

2.4.1 Communication between a VTS authority and a participating vessel should be conducted in accordance with the Guidelines and Criteria for Ship Reporting systems and should be limited to information essential to achieve the objectives of the VTS.² IMO Standard Marine Communication Phrases should be used where practicable.

2.4.2 In any VTS message directed to a vessel or vessels it should be made clear whether the message contains information, advice, warning, or an instruction.

2.5 Organization

2.5.1 Elements of a VTS

In order to perform the required tasks a VTS organization requires adequate staff, housing, instrumentation and procedures governing operations and interactions between the various elements. The requirements in each field are determined by the particular nature of the VTS area, the density and character of the traffic and the type of service that is to be provided. Consideration should be given to the establishment of back-up facilities to sustain and maintain the desired level of reliability and availability.

2.5.2 Tasks that may be performed in accordance with the service rendered

2.5.2.1 A VTS should at all times be capable of generating a comprehensive overview of the traffic in its service area combined with all traffic influencing factors. The VTS should be able to compile a traffic image, which is the basis for its capability to respond to traffic situations developing in its service area. The traffic image allows the VTS operator to evaluate situations and make decisions accordingly. Data should be collected to compile the traffic image. This includes:

- .1 data on the fairway situation, such as meteorological and hydrological conditions and the operational status of aids to navigation;

¹Refer to MSC Circular 586 on the IALA/IAPH/IMPA World VTS Guide.

²Refer to the Guidelines and Criteria for Ship Reporting Systems, paragraph 2.2, Communication. Resolution MSC.43(64).

.2 data on the traffic situation, such as vessel positions, movements, identities and intentions with respect to manoeuvres, destination and routing;

.3 data of vessels in accordance with the requirements of ship reporting and if necessary any additional data, required for the effective operation of the VTS.*

2.5.2.2 Vessel's reports by communication between vessels and the VTS Centre should also be used as a major source of necessary data.

2.5.2.3 To respond to traffic situations developing in the VTS area and to decide upon appropriate actions the acquired data should be processed and evaluated. Conclusions from the evaluation need to be communicated to participating vessels. A distinction should be made between the provision of navigational information, being a relay of information extracted from the VTS sensors and the traffic image, and the provision of navigational advice, where a professional opinion is included.

2.5.3 Operating procedures

Where operating procedures are concerned, a distinction should be made between internal and external procedures. Internal procedures cover operating instruments, interactions among the staff and the internal routing and distribution of data. External procedures cover interactions with users and allied services. A further distinction should be made between procedures governing the daily routine and procedures governing contingency planning such as search and rescue and environmental protection activities. All operational procedures, routine or contingency, should be laid down in handbooks or manuals and be an integral part of regular training exercises. Adherence to procedures should be monitored.

2.5.4 Database

A VTS authority should have, if necessary for the operation of the service, a database with the capacity to retain, update, supplement and retrieve data once collected. Any data retained in a system for further use should be made available only on a selective and secure basis.

2.6 Participating vessels

2.6.1 Vessels navigating in an area where vessel traffic services are provided should make use of these services. Depending upon governing rules and regulations, participation in a VTS may be either voluntary mandatory. Vessels should be allowed to use a VTS where mandatory participation is not required.

2.6.2 Decisions concerning the actual navigation and the manoeuvring of the vessel remain with the master. Neither a VTS sailing plan, nor requested or agreed changes to the sailing plan can supersede the decisions of the master concerning the actual navigation and manoeuvring of the vessel.

2.6.3 Communication with the VTS and other vessels should be conducted on the assigned frequencies in accordance with established ITU and SOLAS chapter IV procedures, in particular where a communication concerns intended manoeuvres. VTS procedures should stipulate what communications are required and which frequencies should be monitored. Prior to entering the VTS area, vessels should make all required reports, including reporting of deficiencies. During their passage through the VTS area, vessels should adhere to governing rules and regulations, maintain a continuous listening watch on the assigned frequency and report deviations from the agreed sailing plan, if such a plan has been established in co-operation with the VTS authority.

*Refer to the Guidelines and Criteria for Ship Reporting Systems. Resolution MSC.43(64).

2.6.4 Masters of vessels should report any observed dangers to navigation or pollution to the VTS centre.

2.6.5 In case of a complete failure of the vessel's appropriate communication equipment the master shall endeavour to inform the VTS centre and other vessels in the vicinity by any other available means of communication of the vessel's inability to communicate on the assigned frequency. If the technical failure prevents the vessel from participation or continuing its participation in a VTS, the master should enter in the vessel's log the fact and reasons for not or further participating.

2.6.6 Vessels should carry publications giving full particulars on governing rules and regulations regarding identification, reporting and/or conduct in the VTS area to be entered.

3 GUIDANCE FOR PLANNING AND IMPLEMENTING VESSEL TRAFFIC SERVICES

3.1 Responsibility for planning and implementing a VTS

It is the responsibility of the Contracting Government or Governments or Competent Authorities to plan and implement vessel traffic services or amendments to such services.

3.2 Guidance for planning a vessel traffic service

3.2.1 Local needs for traffic management should be carefully investigated and determined by analysing casualties, assessing risks and consulting local user groups. Where the risks are considered VTS addressable, in cases where monitoring of the traffic and interaction between Authority and participating vessel is considered to be essential, the implementation of a VTS, as an important traffic management instrument, should be considered.

3.2.2 A VTS is particularly appropriate in an area that may include any of the following:

- .1 high traffic density;
- .2 traffic carrying hazardous cargoes;
- .3 conflicting and complex navigation patterns;
- .4 difficult hydrographical, hydrological and meteorological elements;
- .5 shifting shoals and other local hazards;
- .6 environmental considerations;
- .7 interference by vessel traffic with other marine-based activities;
- .8 a record of maritime casualties;
- .9 existing or planned vessel traffic services in adjacent waters and the need for co-operation between neighbouring States, if appropriate;
- .10 narrow channels, port configuration, bridges and similar areas where the progress of vessels may be restricted;
- .11 existing or foreseeable changes in the traffic pattern resulting from port or offshore terminal developments or offshore exploration and exploitation in the area.

3.2.3 In further deciding upon the establishment of a VTS, Contracting Governments or competent authorities should also consider the responsibilities set forth in 2.2 of these Guidelines and Criteria, and the availability of the requisite technology and expertise.

3.3 Further guidance on vessel traffic services

3.3.1 VTS Authorities should, in the planning of the VTS to be established, make use of available manuals prepared by and published by appropriate international organizations or associations.

3.3.2 The following references should also be consulted for further details:

- .1 IMO Guidelines and Criteria for Ship Reporting Systems (resolution MSC.43(64))
- .2 General Principles for Ship Reporting Systems and Ships Reporting Requirements, including Guidelines for Reporting Incidents Involving Dangerous Goods, Harmful Substances and/or Marine Pollutants (resolution A.851(20))
- .3 The IALA vessel traffic services Manual
- .4 **IALA/IMPA/IAPH/World VTS Guide**

Annex 2 omitted.