

Recommendation on Standards for Training and Certification of VTS Personnel

**IALA Recommendation V-103
May 1998**



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(IALA Recommendation V- 103 , May, 1998)

THE COUNCIL

NOTING that the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended in 1995 (STCW Convention) contain regulations concerning training of ships' personnel and the Seafarer's Training, Certification and Watchkeeping Code (STCW Code) contains specifications of minimum standard of competence for ships' personnel;

NOTING ALSO that STCW 95 adopted Resolution 10 concerning Training of maritime pilots, vessel traffic personnel and maritime personnel employed on mobile offshore units;

NOTING FURTHER that the International Maritime Organisation in Assembly Resolution A.857 (20) on Guidelines for VTS:

- .1 recommend that VTS Authorities be 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;
- .2 describe the skill and knowledge qualifications required by VTS Operators to provide vessel traffic services.

RECOGNISING that the 8th International Symposium on VTS (Rotterdam 1996) concluded that VTS Authorities should set standards for VTS Operators in accordance with international guidelines and other relevant material. VTS Authorities should also provide facilities for training to those standards and institute measures to maintain those standards.

RECOGNISING ALSO that following a request from the 8th International Symposium on VTS, IALA undertook to develop suitable training and certification standards for VTS Personnel.

HAVING CONSIDERED the proposals by the IALA Ad Hoc Group on Training and Certification Standards for VTS Personnel:

ADOPTS the Standards for Training and Certification of VTS Personnel set out in the annex to this Recommendation;

RECOMMENDS National Members and other appropriate Authorities providing, or intending to provide, vessel traffic services to use the standards given in the annex and their related model courses as the basis for the training and certification of VTS personnel.

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Chapter 1 - Introduction

1.1 General

The international character of shipping operations generates the need for a common approach and universally agreed professional standards for Vessel Traffic Services. The successful delivery of such services depends upon competent and experienced personnel to discharge the responsibilities of a VTS Authority.

The recruitment, selection and training of suitable personnel is a pre-requisite to the provision of professionally qualified personnel capable of contributing to safe and efficient marine operations. Such personnel will help to ensure that full and due regard is given to the diverse tasks inherent in VTS activities.

This Recommendation sets out the training requirements and certification standards for VTS personnel. These should be implemented by National Members and other appropriate Authorities to ensure that uniform standards of procedures, practices and professional standards are applied by Vessel Traffic Services world-wide.

1.2 Definitions and Clarifications

For the purpose of this Recommendation the following definitions and clarifications have been used:

Accredited training programme is a course of study comprising basic or advancement training at an Accredited Training Institute and “on the job” training carried out at the appropriate VTS Centre.

Accredited Training Institute is an establishment approved by the Competent Authority for the purpose of carrying out basic or advancement training of VTS Personnel.

Allied Services are services actively involved in the safe and efficient passage of the vessel through the VTS Area.

Basic Training is training given at an Accredited Training Institute to the standards described in Table 1 (VTS Operator Competence Chart).

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

Competence is the ability to perform defined tasks or duties effectively.

On-the-Job training is training and familiarisation at the VTS Centre at which the person will be employed. It includes training on the particular services provided by the VTS, the facilities and equipment used as well as the local geography and appropriate port regulations and procedures.

Revalidation of a VTS Operator Certificate encompasses refresher and upgrading training.

Simulated Training is the simulation of operational events, practices and procedures to assess the ability of candidates to demonstrate their levels of competence.

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

VTS Certification Log is a record of certificates and endorsements awarded to VTS Personnel.

VTS Operator Certificate is a certificate awarded by a Competent Authority on successful completion of Basic Training; it entitles the authorised holder to serve in the capacity of a VTS Operator and perform the functions which endorsements have been made.

VTS Personnel are persons trained in VTS operations and holding appropriate qualifications issued by, or on behalf of, a Government or a Competent Authority. Two levels of skills, knowledge and competence of VTS Personnel are set out in this Recommendation. The two levels are described as VTS Operator and VTS Supervisor respectively.

VTS Sailing Plan is 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.

1.3 References

1.3.1 IMO Documents

- .1 Chapter V, regulation 8-2 (Vessel Traffic Services) of the Safety of Life At sea Convention, 1974, as amended.
- .2 Resolution 10 of the 1995 Conference of Parties to the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW Conference)
- .3 Resolution A.857(20) on Guidelines for Vessel Traffic Services

1.3.2 IALA Documents

- .1 VTS Manual
- .2 IALA/IAPH/IMPA World VTS Guide

1.4 Abbreviations

- | | | | |
|----|------|---|---|
| 1. | IMO | - | International Maritime Organisation |
| 2. | IALA | - | International Association of Lighthouse Authorities |
| 3. | IAPH | - | International Association of Ports and Harbours |
| 4. | IMPA | - | International Marine Pilots Association |
| 5. | VTS | - | Vessel Traffic Service |

Chapter 2 - General Provisions

2.1 Responsibilities

The following excerpts from IMO Resolution A.857(20) on Guidelines for Vessel Traffic Services are relevant to training:

In planning and establishing a VTS, the Government or the Competent Authority should:

- .1 determine the services and level to which the services are to be provided by the VTS, having regard to the objectives of the VTS;
- .2 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;
- .3 establish appropriate qualifications and training requirements for VTS operators, taking into consideration the type and level of services to be provided;
- .4 ensure that provisions for the training of VTS operators are available.

In operating a VTS the VTS Authority should:

- .5 ensure that the standards set by the Competent Authority for levels of service and operator qualifications and equipment are met;
- .6 ensure that the VTS operations are harmonised with, where appropriate, ship reporting and routing measures, aids to navigation, pilotage and port operations.

2.2 Principles

In order to discharge the duties required by VTS, all personnel should obtain a VTS qualification before being considered competent to act as a VTS Operator or Supervisor.

A person should therefore only be considered capable of carrying out the duties of a VTS Operator when in possession of:

- .1 a valid VTS Operator Certificate issued by, or on behalf of, the Competent Authority of the country concerned; and
- .2 an appropriate endorsement in the VTS Certification Log.

Further VTS qualifications, including VTS Supervisor endorsement, should be awarded only following the completion of accredited training programmes.

2.3 Objectives

The objectives of this Recommendation are to:

- .1 provide a basis for establishing a training programme on the specific knowledge and skill requirements necessary for qualification as a VTS Operator;
- .2 maintain a satisfactory level of operational performance through the systematic provision of refresher and/or advancement training for qualified personnel;
- .3 provide VTS Authorities with guidelines for recruiting potential VTS Operators;
- .4 ensure that certificated personnel are qualified to act as VTS Operators;
- .5 assess VTS Operators ability to perform to established and recognised standards;
- .6 support, as far as is practicable, the consistent application of operating standards and procedures by vessel traffic services world-wide;
- .7 foster professionalism and pride in VTS Personnel.
- .8 provide a basis for a structured progression for VTS Personnel; and,
- .9 provide the basis for model courses for VTS personnel.

2.4 Certificates, Certification Logs and Endorsements

A VTS Operator Certificate and VTS Certification Log should be awarded upon successful completion of basic training programme at an accredited training institute. The VTS Certification Log should be used to record the award of a VTS Operator Certificate, successful completion of on-the-job training for a specific VTS Centre and subsequent endorsements which authorise the holder to perform the duties of a VTS Operator or Supervisor at a specific VTS Centre. Endorsements should be awarded only on completion of the necessary accredited training programmes.

VTS Operator Certificates and VTS Certification Logs should be in the official language or languages of the awarding country. If the language used is not English, the text should include a translation into that language.

2.5 Recognition of Certificates

Where suitable reciprocal arrangements apply, the Competent Authority of one country should recognise a VTS Operator Certificate issued by the Competent Authority of another country provided that:

- the certificate has been issued in accordance with this Recommendation; and,
- the Competent Authorities are satisfied with the training arrangements of the other country concerned.

Chapter 3 - VTS Personnel

3.1 Operators and Supervisors

3.1.1 General

VTS Personnel should be authorised to undertake duties associated with an information service, navigation assistance service or traffic organization service only when in possession of a current VTS Operator Certificate and, if appropriate, VTS Supervisor endorsements.

Internationally agreed qualifications for VTS personnel are the key to the establishment of common training standards. Previous qualifications may be taken into consideration when assessing the training requirements for prospective VTS Operators or Supervisors.

VTS qualifications should be issued for VTS Operator and, where appropriate to the level of services provided, the VTS Supervisor. Where VTS Operators or Supervisors are required to act as watch leaders the training should reflect this responsibility.

The qualifications to be awarded after successful completion of an accredited training programme should be in the form of a “VTS Operator Certificate” with appropriate endorsements recorded in the VTS Certification Log. The VTS Certification Log should indicate whether the holder is authorised to undertake the duties of a VTS Operator in an Information Service, a Navigational Assistance Service or a Traffic Organisation Service.

3.1.2 Operational Job descriptions

VTS Authorities should develop detailed job descriptions for personnel at each VTS centre, based on the services to be provided, the equipment available and the coordination needed with other organisations and departments.

Examples of the format of job descriptions for VTS Operators and VTS Supervisors are given in annexes 1 and 2 respectively.

3.1.3 Standards of Competence

The Standards of Competence recommended for VTS Operators and VTS Supervisors are set out in Tables 1 and 2 respectively.

3.2 Manager

Some VTS organisations may require the appointment of a manager to administer and interface with regional or port management authorities. In such circumstances the manager should possess managerial qualifications to the satisfaction of the Government or Competent Authority concerned.

The manager should have knowledge of the principles and practices of the particular VTS, the levels of service provided and the overall structure and capabilities of the VTS organisation. This VTS knowledge may be gained through experience as a VTS Operator or VTS Supervisor. Such experience would be particularly relevant where the managers role includes responsibilities for VTS contingency planning.

Guidelines on the VTS subjects in which managers may require either experience or training are given in Annex 3.

3.3 Career incentives

The formal recognition of VTS Operator Certificates provides the foundation for a properly balanced and self-evident career structure and the impetus to set and strive for improved standards of performance.

The establishment of universally recognised qualifications places the profession on a par with the shipping and pilotage industry to whom it serves and owes allegiance. The regular validation of those qualifications seeks to engender improvement and quality standards comparable to those of other professions. In combination these attributes enable successful personnel to offer their services for employment on a world-wide basis, subject to the maintenance of their certificated levels of performance.

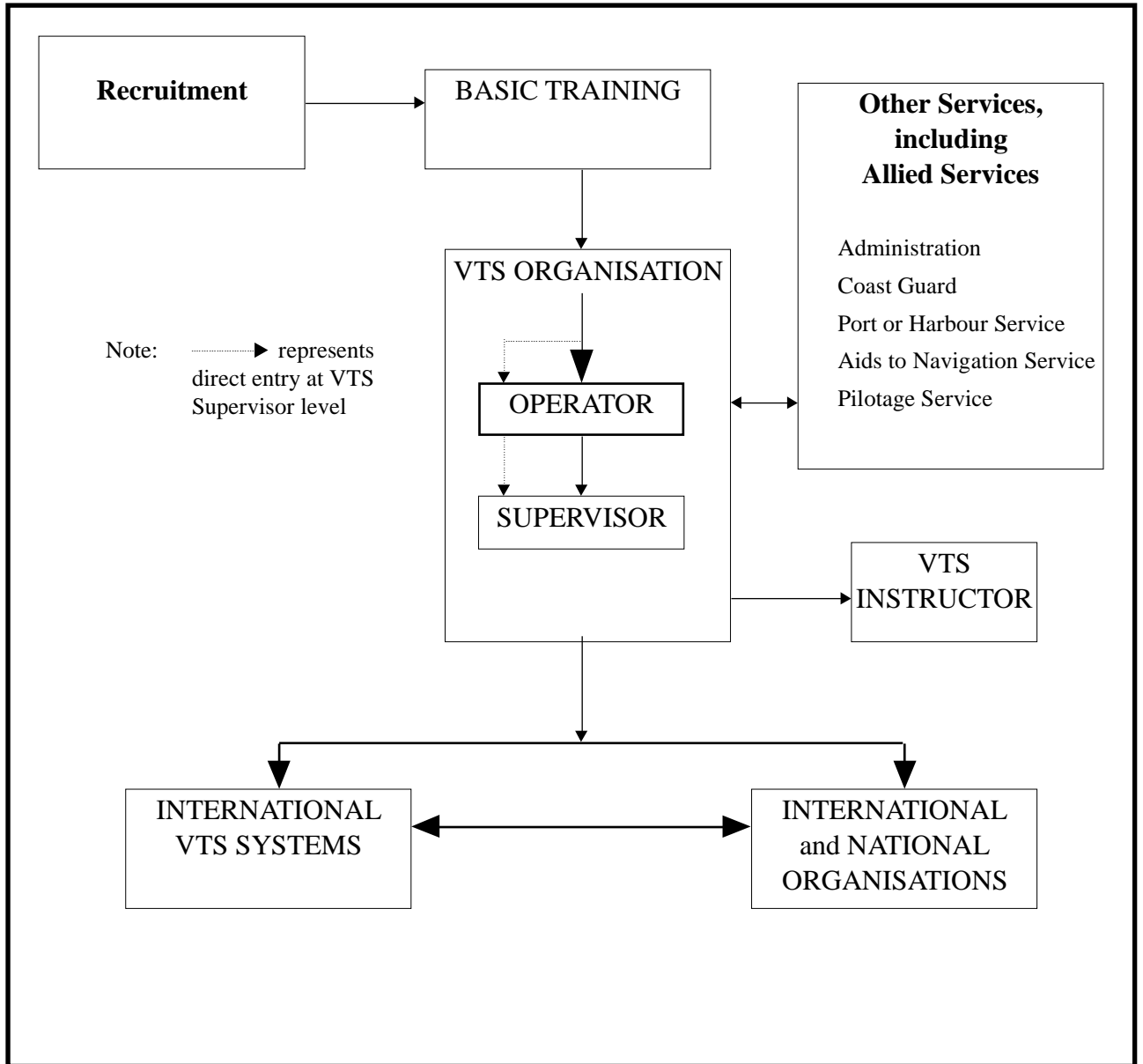
Additionally, the scope for career progression, either in VTS or in a wider diversity of associated marine activities offers a career structure which provides for motivation and ambition, whilst making continued use of the skills and experience gained. (see Fig. 1).

3.4 Instructor

VTS Personnel who demonstrate a flair for training should be encouraged to obtain experience in instructional techniques, knowledge of training programmes and an understanding of specific training objectives. This should enable them to become instructors for basic or on-the-job training. However, in order to maintain high levels of training effectiveness, instructors must have an appropriate balance of professional VTS knowledge and academic qualifications.

Competent Authorities should ensure that instructors are appropriately qualified and experienced for the particular types and levels of training and corresponding assessment of competence as described in Tables 1 and 2.

Figure 1. Possible Career enhancement



Chapter 4 - Selection and Recruiting

4.1 Entry Standards

Candidates for VTS Operator training should undergo a selection procedure to ensure that they have the potential abilities to undertake the responsibilities set out by the VTS Authority.

The selection procedure should include aptitude testing, medical examination and an assessment of the personal suitability of the candidate.

Candidates should possess a good knowledge of their native language. If their native language is not English, they should also demonstrate that they have the ability to learn the English language.

During the recruitment process the VTS Authority should assess the skill and knowledge of each candidate, in relation with the services provided by the VTS at which they will be employed, and ascertain the specific basic training required by the person to permit a VTS Operator Certificate to be issued.

Personnel may be recruited directly as VTS Supervisors if they can demonstrate, and the VTS Authority is satisfied, that they have the required experience to undertake the responsibilities and duties of a VTS Supervisor. Such personnel should be awarded a VTS Operator Certificate and VTS Certification Log after completing such VTS Operator training and additional training as may be necessary to meet the standards of competence for a VTS Supervisor.

4.2 Aptitude testing

Adequate aptitude/assessment tests should be carried out prior to acceptance of candidates for initial training. These tests should be carried out by all candidates regardless of whether they have previous maritime experience. The tests should be designed to determine the ability of candidates to:

- pick out relevant information from a variety of information;
- combine auditory and visual information;
- demonstrate spatial and situational awareness;
- act alertly and decisively in busy situations; and
- carry out several tasks simultaneously.

The tests should also demonstrate that candidates can:

- carry out routine work without getting bored;
- show initiative while working within a framework of standards, regulations and structured procedures;
- be vigilant; and,
- have good verbal communication skills

Tests which employ simulation of traffic movements are recommended for this assessment.

An example of how aptitude testing might be arranged is given in Annex 4.

4.3 Medical/physical requirements

Candidates should meet the medical standards of health established by the Competent Authority.

4.4 Personal attributes

Personal attributes are important factors in the selection criteria. A continual assessment programme during the selection procedure and basic training should be made of the candidates suitability.

Assessment should include the ability of the candidate to work as a member of a team which includes other VTS personnel, ships' masters and navigating officers, pilots and other persons involved in traffic movements.

Chapter 5 - Qualifications and certification

5.1 Introduction

The award of VTS Operator qualifications should be based on the principle that satisfactory results are obtained during both the basic training course and on-the-job training.

5.2 Qualification

The qualification for personnel to act as VTS Operators are:

- the possession of a current VTS Operator Certificate; and,
- an endorsement in the VTS Certification Log relating to the successful completion of on-the-job training at the VTS centre at which the Operator is employed.

Note: The VTS Certification Log should be endorsed at each VTS Centre at which the operator has completed on-the-job training.

The qualification for personnel to act as VTS Supervisors are:

- the possession of a current VTS Operator's Certificate;
- an endorsement in the VTS Certification Log Book relating to the completion of on-the-job training at the VTS centre at which the Supervisor is employed; and,
- an endorsement in the VTS Certification Log Book relating to the completion of suitable advancement training, including training at the VTS centre at which the Supervisor is employed.

5.3 Certification

5.3.1 VTS Operator Certificate

A VTS Operator Certificate should be awarded to candidates on completion of basic training. The certificate should include the:

1. candidates full name;
2. country in which it was awarded;
3. signature of an authorised member of the Competent Authority ;
4. date of award; and,
5. serial number of the certificate

The Certificate should be in a format similar to the example given in Annex 5.

5.3.2 VTS Certification Log

A VTS Certification Log should be issued with the certificate. The Log should include:

1. The candidates name;
2. Brief details of the VTS Operator Certificate, including its number;
3. The level of service, (ie, Information Service, Navigational Assistance Service or Traffic Organisation Service), which the holder is authorised to provide;
4. The name of each VTS Centre at which on-the-job training has been completed, the name of the on-the-job instructor, the signature of the person responsible for on-the-job training and the date the training was completed;
5. All break of three months or more in carrying out the duties of a VTS Operator;
6. The results of all annual assessments;
7. The name of the establishment at which the Certificate was revalidated, the signature of the person responsible for the revalidation and the date of revalidation; and, where appropriate;
8. The name of the establishment at which advancement training has been completed, the signature of the person responsible for the training and the date the training was completed;
9. The name of the VTS Centre at which the holder has been authorised to carry out on-the-job training, the name of the establishment at which the additional training was undertaken, the signature of the person responsible for the training and the date the training was completed.

The Log should be used to record:

1. On-the-Job training at each VTS at which the holder is employed as a VTS Operator or Supervisor;
2. Annual assessment records;
3. Revalidation records;
4. Additional training courses successfully completed; and,
5. Advancement courses, or training, successfully completed.

5.4 Validity

A VTS qualification should be valid until either:

1. an annual assessment indicates that the holder has fallen below the standards set by the Competent Authority for operator qualifications; or,
2. there is a break in carrying out the duties for a period of six months, or such shorter period as may be required by the Competent Authority concerned, except for any additional VTS training which might arise.

5.5 Annual assessment

An assessment of the performance of each VTS Operator should be carried out by a VTS Supervisor at annual intervals to ensure that the standards set by the Competent Authority for operator qualifications are continuing to be met.

5.6 Revalidation

Revalidation is required if either of the conditions described in section 5.4 occur. The revalidation should ensure the holder of a VTS Operator qualification continues to maintain professional competence by one of the following methods:

1. An evaluation by an on-the-job training instructor; or,
2. Successful completion of an advancement training course; or,
3. A revalidation assessment by a board convened by the VTS Authority.

5.7 Qualifications of instructors and assessors

Competent Authorities should ensure that instructors and assessors are appropriately qualified and experienced for the particular training and assessment of competence for which they are given responsibility. Instructors for basic and on-the-job training should hold suitable professional and academic qualifications. However, on-the-job instructors may not need the same level of academic qualifications as basic training instructors.

Chapter 6 - Training

6.1 Introduction

The type of training depends largely on the knowledge base of the particular person concerned. It is envisaged that a set of model courses will be designed aimed at setting out the requirements for basic training.

All stages of training, whether basic or on-the-job should include continuous assessment. A task book (training log) should be used to show progress being made by personnel in their particular training. The log would show the number of hours allocated and/or time in which each task was completed. Training times should be dependent on the experience, if any, of trainees. Training to work as a member of a team should normally be part of the syllabus.

All training and assessment of VTS Personnel should be:

- .1 structured in accordance with written programmes, including such methods and media of delivery, procedures, and course material as are necessary to achieve the prescribed standard of competence; and
- .2 conducted, monitored, evaluated and supported by persons qualified in accordance with § 5.7

All training courses should be based on the model courses associated with this Recommendation and be quality approved and accredited by the Competent Authority concerned. Basic training should be carried out at an Accredited Training Institute.

Competent Authorities should ensure that the aims and objectives of training are defined within an overall training programme and that specific training objectives and tasks are selected so as to relate as closely as possible to VTS tasks and practices.

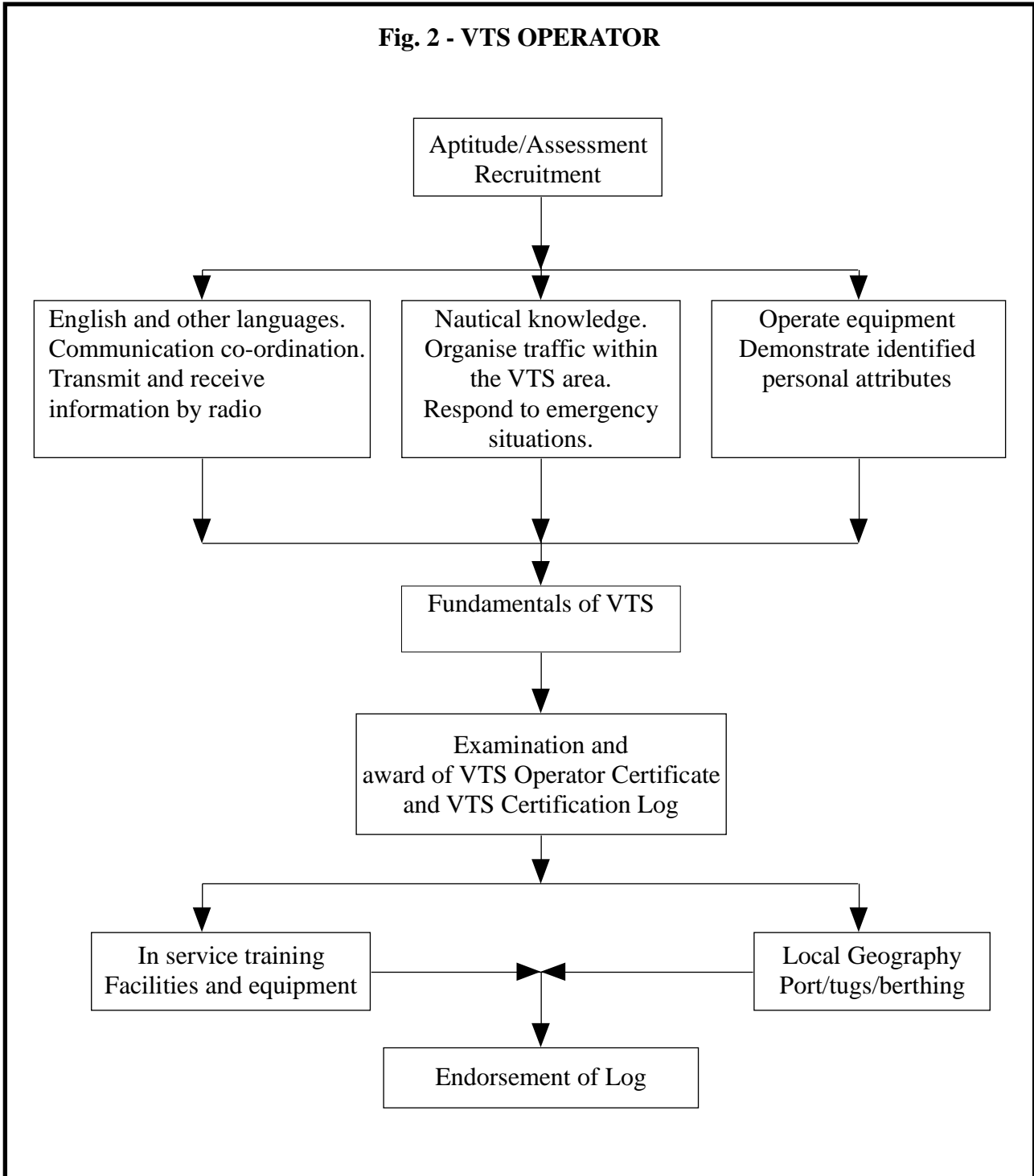
6.2 VTS Operator

The award of a VTS Operator Certificate and endorsement to act as a VTS Operator should be achieved by successfully undertaking the following steps:

- Step 1. Basic training including:
 - Use of the English language and other languages authorised by the Government
 - Nautical knowledge
 - Operate equipment
 - Organise traffic within the VTS area
 - Communication co-ordination
 - Transmit and receive information by radio
 - Demonstrate identified personal attributes
 - Respond to emergency situations
- Step 2. Fundamentals of Vessel traffic Services
 - Information Service
 - Navigational Assistance Service
 - Traffic Organisation Service

- Step 3. Award of a VTS Operator certification and a VTS Certification Log
- Step 4. “On-the-Job” training
- Step 5. Award of an endorsement in the VTS Certification Log

Fig. 2 - VTS OPERATOR



6.3 VTS Supervisor

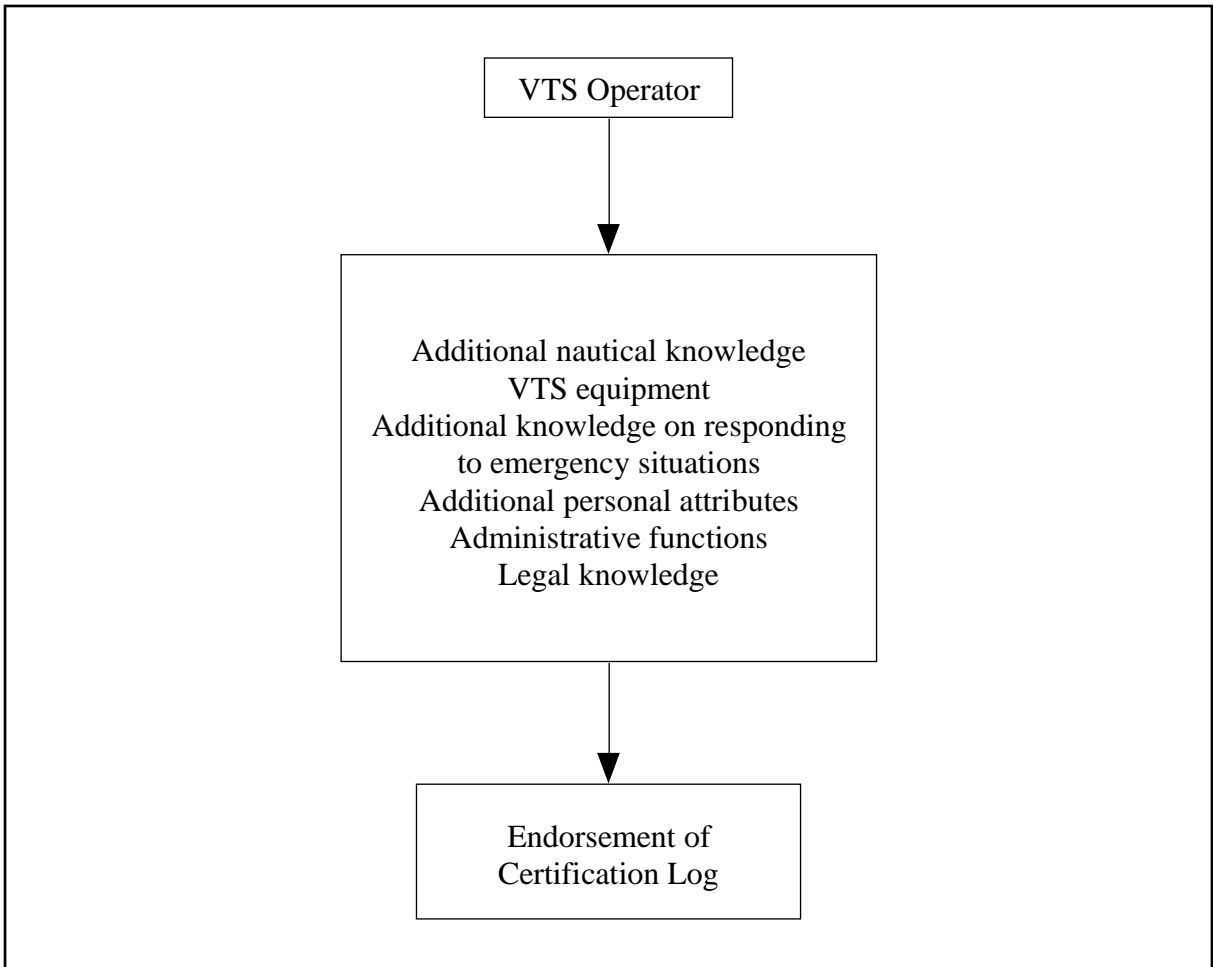
The award of an endorsement in the VTS Certification Log as a VTS Supervisor should be obtained by a VTS Operator successfully undertaking the following steps:

Step 1. Advancement training including:

- Additional nautical knowledge
- VTS equipment
- Additional knowledge on responding to emergency situations
- Demonstration of additional personal attributes
- Administrative functions
- Legal knowledge

Step 2. Endorsement of VTS Certification Log

Fig. 3 - VTS Supervisor



6.4 On-the-Job Training

Every certificated VTS Operator should receive on-the-job training from a qualified on-the-job Instructor on taking up a new post before being authorised to carry out the duties of a VTS Operator at the new VTS Centre.

On-the-job training should follow an approved programme of training with specific learning objectives, which:

- .1 provides knowledge of the local or regional nautical topography, hydrographic and meteorological characteristics and legislation and regulations relating to the responsibilities and activities of the VTS Centre.
- .2 provides detailed knowledge of the services provided by the VTS Centre and ensures that during the required period of training the VTS Operator receives systematic practical training and experience in the tasks, duties and responsibilities of a VTS Operator at the VTS Centre concerned;
- .3 is closely supervised and monitored by a qualified on-the-job Instructor at the VTS Centre; and
- .4 is adequately documented and recorded in the VTS Certification Log.

The Competent Authority should define the duration of the on-the-job training period and the detailed training syllabus, taking into account the requirements of the particular VTS Centre.

6.5 Model Courses

The structure of the model courses associated with this Recommendation is based on a modular approach. This approach will:

- permit model courses to be developed which reflect the type of service, eg, Information Service, Navigational Assistance Service of Traffic Organisation Service, and the functions to be carried out by different categories of VTS, while maintaining common international standards; and
- permit training courses to be developed which take into account the previous training and experience of prospective VTS personnel.

Table 1- VTS Operator Competence chart

Table 1

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Use the Standard Marine Navigational Vocabulary as replaced by the IMO Standard Marine Communication Phrases and use English and any other language authorised by the Government in written and oral form	<p><i>English Language and language authorised by the Government</i></p> <p>Adequate knowledge of the English language and the language authorised by the Government to enable the operator to use charts, publications and regulations; to understand meteorological, waterway, port management and safety information and to communicate with other ships, shore facilities and agencies. Including the ability to use and understand the Standard Marine Navigational Vocabulary as replaced by the IMO Standard Marine Communication Phrases</p> <ul style="list-style-type: none"> • Articulate • concise • clear enunciation • easily understood 	<p>Examination and assessment of evidence obtained from practical instruction</p> <p>Standard language assessment as used by the Government</p>	<p>English language publications, regulations and messages relevant to the safety of the VTS area are correctly interpreted or drafted</p> <p>Written and verbal reports regarding vessels and shore facilities relating to the VTS area are correctly interpreted or drafted</p> <p>Communications by any means are clear and understood</p> <p>Written reports</p> <p>Oral communication</p> <p>Reading skills</p>
Traffic management within the VTS area	<p><i>Regulatory requirements</i></p> <ol style="list-style-type: none"> 1. relevant national and international regulations 2. implications of legal liabilities related to VTS functions 3. safety related ship certificates 	Examination and assessment of evidence obtained from practical instruction and on the job training	Legislative requirements relating to the VTS area and the protection of the marine environment are correctly identified
	<p><i>VTS Environment</i></p> <ol style="list-style-type: none"> 1. traffic patterns 2. VTS area 	Examination and assessment of evidence obtained from practical instruction and approved simulator and on the job training	Demonstrate the ability to carry out the task safely and effectively
	<p><i>Traffic Monitoring and organisation</i></p> <p>Thorough knowledge of relevant national and international regulations, procedures, equipment, skills and techniques involved in monitoring and organising vessel traffic</p>	<p>Examination and assessment of evidence obtained from simulated and on the job training for the following traffic configurations</p> <ol style="list-style-type: none"> 1. off-shore 2. coastal 3. harbour approach and ports 4. inland waterways 	<p>Legislative requirements relating to the VTS area and the protection of the marine environment are correctly identified</p> <p>Demonstrate the ability to carry out the task safely and effectively</p>

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Operate equipment	<p><i>Basic Equipment</i></p> <ol style="list-style-type: none"> 1. Telecommunications 2. Radar 3. Audio/Video 4. VHF/DF 5. Performance monitoring 	Examination and assessment of evidence obtained from practical instruction and approved simulator and on the job training	<p>Demonstrate the ability to operate the equipment safely and effectively</p> <p>Information obtained from the equipment and associated features is correctly interpreted and analysed taking into account the limitations of the equipment and prevailing circumstances and conditions</p>
	<p><i>Basic systems</i></p> <ol style="list-style-type: none"> 1. Computerised 2. Management Information 3. Manual tracking 4. Radar tracking 	Assessment of evidence obtained from approved simulated and on the job training	<p>Demonstrate the ability to operate the equipment safely and effectively</p> <p>Information obtained from the system and associated features is correctly interpreted and analysed taking into account the limitations of the system and prevailing circumstances and conditions</p>
	<p><i>Evolving technologies</i></p> <ol style="list-style-type: none"> 1. ECS 2. VTMISS 3. AIS 	Assessment of evidence obtained from approved simulated and on the job training	Demonstrate the ability to understand the techniques and to operate the equipment safely and effectively
Application of Nautical Knowledge	<p><i>Carry out chartwork</i></p> <p>Knowledge of and ability to use navigational charts and related publications</p> <ol style="list-style-type: none"> 1. Chart information and terminology 2. Plotting positions on charts 3. True and magnetic courses 4. Course/speed/distance/time calculations 5. Tides and currents 6. Traffic patterns 7. Charts and publications corrections 	Examination and assessment of evidence obtained from practical instructions and approved simulated and on the job training using chart catalogues, charts and navigational publications	<p>The information obtained from navigational charts and publications is relevant, interpreted correctly and properly applied</p> <p>Tools associated with chart work are properly manipulated, work carried out on the chart is easily interpreted and adheres to indicated standards</p> <p>Calculations and measurements of navigation information are accurate</p>

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Application of Nautical Knowledge Continued	<p><i>Collision Regulations</i></p> <p>Understanding of the content, application and intent of the International Regulations for Preventing Collisions at Sea</p>	Examination and assessment of evidence obtained from practical instruction and approved simulated and on the job training	Demonstrate the ability to interpret the application of the regulations relevant to a VTS area
	<p><i>Aids to Navigation</i></p> <p>Knowledge of various buoyage systems and electronic aids to navigation systems</p>	Examination and assessment of evidence obtained from practical instruction and approved simulated and on the job training	Demonstrate the ability to interpret the effect of aids to navigation on the traffic flow in a VTS area
	<p><i>Navigational Aids</i></p> <p>Basic understanding of Shipboard Navigational Equipment and electronic means of navigation (Radar, Compasses ECDIS, ECS, etc.)</p>	Assessment of evidence obtained from approved simulated and on the job training	Demonstrate the ability to interpret the effect of aids to navigation on the traffic flow in a VTS area
	<p><i>Shipboard Knowledge</i></p> <p>Basic understanding of:</p> <ol style="list-style-type: none"> 1. ship terminology 2. different types of ships and cargo, including dangerous goods codes 3. ship stability 4. propulsions systems 5. external forces 6. vessel bridge procedures 	Examination and assessment of evidence obtained from practical instruction and approved simulated and on the job training	Demonstrate the ability to assimilate all available information relevant to ship design, meteorological and hydrographic conditions that may influence the flow of traffic within a VTS area
	<p><i>Port Operations</i></p> <p>Knowledge of port operations.</p> <p>Knowledge of and ability to co-ordinate information relating to:</p> <ol style="list-style-type: none"> 1. pilotage 2. harbour operations (including contingency plans) 3. security 4. tugs and towing 5. ships agents 6. other allied services 	Examination and assessment of evidence obtained from practical instruction and approved simulated and on the job training	Demonstrate the ability to assimilate all available information relevant to port operations and allied services that may influence the flow of traffic within a VTS area

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Communication Co-ordination	<p><i>General communication skills</i></p> <p>Knowledge of:</p> <ol style="list-style-type: none"> 1. aspects of inter personal communication 2. problems which can block or hinder the communication process 3. the difference between verbal and non-verbal communications 4. cultural aspects that can hinder the acquisition of a common understanding of messages communicated 	Assessment of skills in overcoming communication problems intentionally introduced in a simulated environment	Demonstrate the ability to avoid the introduction of communication problems and to overcome such problems when they are experienced
	<p><i>Co-ordinate various communications between marine and marine related agencies</i></p> <ol style="list-style-type: none"> 1. Routine 2. Emergency 3. Support functions 	Assessment of evidence obtained from approved simulated and on the job training	Demonstrate the ability to prioritise, relay and co-ordinate various communications between marine and marine related agencies, both on board participating vessels and in shore facilities
	<p><i>Log keeping</i></p> <ol style="list-style-type: none"> 1. Manual 2. Electronic 	Assessment of evidence obtained from approved simulated and on the job training	Demonstrate the ability to accurately maintain Logs
VHF Radio	<p><i>Transmit and receive information using VHF radio equipment</i></p> <ol style="list-style-type: none"> 1. Radio Operator practices and procedures 2. VHF radio systems and their use in VTS 3. Operation of radio equipment 4. Communication procedures, including search and rescue applications 	<p>Examination and assessment of evidence obtained from practical demonstration of operational procedures using:</p> <ol style="list-style-type: none"> 1. approved equipment 2. communication simulator, where appropriate 3. radiocommunication laboratory equipment, where appropriate 	<p>Transmission and reception of communications comply with international regulations and procedures and are carried out efficiently and effectively</p> <p>English language messages relevant to the VTS area are correctly handled</p>
Demonstrate identified personal attributes specifically related to the duties of a VTS Operator	<p><i>Diplomacy</i></p> <p>Knowledge of, and ability to perform:</p> <ol style="list-style-type: none"> 1. public relations 2. operational telephone conversations 3. negotiations with other interested parties 	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms with acceptable principles, including confidentiality, and procedures established by the Competent Authority concerned

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Demonstrate identified personal attributes specifically related to the duties of a VTS Operator (Continued)	<p><i>Interaction with others</i></p> <p>Demonstrate:</p> <ol style="list-style-type: none"> 1. positive, co-operative attitude 2. empathy 3. ability to give and receive constructive criticism 4. respect chain of command 5. ability to work within a team 	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms with acceptable principles and procedures established by the Competent Authority concerned
	<p><i>Time management</i></p> <p>Demonstrate skills required to perform and prioritise multiple and varying tasks</p> <p>Demonstrate initiative and critical thinking skills in dealing with unexpected circumstances</p>	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms with acceptable principles and procedures established by the Competent Authority concerned
	<p><i>Reliability</i></p> <p>Demonstrate</p> <ol style="list-style-type: none"> 1. punctuality 2. thoroughness 3. decisiveness 	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms with acceptable principles and procedures established by the Competent Authority concerned
	<p><i>Stress management</i></p> <p>Demonstrate decision making skills when dealing with routine situations, emergency situations, panic stricken people and other unexpected circumstances</p>	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms with acceptable principles and procedures established by the Competent Authority concerned
Respond to emergency situations	<p><i>Response to contingency plans</i></p> <p>Knowledge of related national and international regulations concerning distress, pollution prevention and special circumstances and demonstrate the ability to:</p> <ol style="list-style-type: none"> 1. prioritise and respond to situations, 2. commence alerting procedures, 3. coordinate with allied services, and 4. record activities <p>while continuing to maintain a safe waterway in all aspects</p>	Assessment of evidence obtained from approved simulated and on the job training	<p>Type and scale of emergency properly identified</p> <p>Activate the relevant contingency plan appropriate</p> <p>Actions undertaken ensure the protection of the VTS area and, as far as practicable, maintain a safe flow of marine traffic</p>

Table 2 - VTS Supervisor Competence chart

Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Nautical knowledge	<p><i>Chartwork/publications</i></p> <p>Ensure that:</p> <ol style="list-style-type: none"> 1. all charts and publications are kept up to date in a timely and accurate manner and relevant documentation completed 2. changes in data in use within the VTS are recorded accurately 3. aids to navigation in a VTS area are operating within normal parameters 	Examination and assessment of evidence obtained from approved simulator and on the job training	<p>Interpretation and implementation of changes are correct and applied as soon as practicable after receipt</p> <p>Malfunction of any aid to navigation in the area is identified in a timely manner</p>
	<p><i>Marine Organisations</i></p> <p>Thorough knowledge of marine related organisations</p>	Examination and assessment of evidence obtained from practical instruction and approved simulator and on the job training	The responsibilities and activities of the organisations are known and understood
	<p><i>Port Management</i></p> <p>Thorough knowledge and ability to co-ordinate information management of:</p> <ol style="list-style-type: none"> 1. pilotage 2. harbour operations (including contingency plans) 3. security 4. tugs and towing 5. ships agents 6. other allied services 	Examination and assessment of evidence obtained from practical instruction and approved simulator and on the job training	The responsibilities and activities relating to the services are known. Methods by which liaison can be made with each of the services are known and understood
VTS equipment	<p><i>Equipment availability</i></p> <p>The ability to determine that the VTS equipment is operating satisfactorily and, when necessary, to take appropriate action to ensure that the service is maintained at an operational level, and any defects are rectified and relevant documentation is kept up to date</p>	Examination and assessment of evidence obtained from practical instruction and approved simulator and on the job training	The methods of comparing actual operational performance with normal performance is known. A good understanding of the overall system, including all equipment and sub-system redundancy arrangements
Demonstrate identified personal attributes specifically related to the duties of a VTS Supervisor	<p><i>Diplomacy</i></p> <p>Thorough knowledge of, and ability to perform:</p> <ol style="list-style-type: none"> 1. procedures for dealing with the media and the general public 2. operational telephone conversations 3. negotiations with other interested parties 	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms with acceptable principles, including confidentiality, and procedures established by the Competent Authority concerned

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Column 1	Column 2	Column 3	Column 4
Competence	Knowledge, understanding and proficiency	Methods for demonstrating competence	Criteria for evaluating competence
Demonstrate identified personal attributes specifically related to the duties of a VTS Supervisor continued	<p><i>Watch Management</i></p> <p>Demonstrate the ability to:</p> <ol style="list-style-type: none"> 1. effect team work procedures 2. administer and organise work programmes 3. manage a VTS watch 	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms with acceptable principles and procedures established by the Competent Authority concerned
	<p><i>Stress management</i></p> <p>A thorough knowledge of stress management techniques</p>	Assessment of evidence obtained from approved simulated and on the job training	Conduct conforms with acceptable principles and procedures established by the Competent Authority concerned
Respond to emergency situations	<p><i>Implement contingency plans relating to distress, pollution and special circumstances</i></p> <p>Have knowledge of :</p> <ol style="list-style-type: none"> 1. pre-determined procedures concerning emergency situations and co-ordinating their implementation 2. the availability of additional resources and the circumstances under which they should be used 3. the circumstances under which delegation of responsibilities may take place <p>Assisting in the coordination of training exercises related to emergency situations</p>	Assessment of evidence obtained from approved simulated and on the job training	Actions taken in an emergency are in accordance with the appropriate agreed contingency plan
Administration functions	<p><i>Planning and organisation</i></p> <p>Demonstrate the ability to:</p> <ol style="list-style-type: none"> 1. co-operate with users and allied services in the preparation of VTS sailing plans and passage plans for traffic joining or departing from a VTS area 2. develop and promulgate a 24 hour traffic plan 3. prepare reports 4. perform manual and electronic log keeping functions 5. assess and document performance 	Examination and assessment of evidence obtained from practical instruction and report writing	VTS sailing plans, passage plans, traffic plans, reports, logs and performance records are in formats suitable for easy reference and correct follow established procedures and practices
Legal Knowledge	<p><i>General</i></p> <p>Thorough knowledge of:</p> <ol style="list-style-type: none"> 1. legal liabilities and their implications, 2. safety related ship certificates 3. acts and regulations 	Examination and assessment of evidence obtained from instruction	Action taken and procedures followed correctly apply and make full use of advice available

Annex 1 - VTS Operator job description

1 Introduction

The job description set out in this annex is intended to provide a broad guide to the tasks expected to be undertaken by a VTS Operator. VTS Authorities should develop detailed job descriptions for VTS Operators at each VTS centre, based on the services to be provided by the particular centre, the equipment available and the co-ordination which takes place with Allied Services.

2 Job purpose

To provide authorised information and instructions to vessels appropriate to the level of service provided by the VTS and to decide on the actions to be taken in response to data received on marine traffic.

To communicate as necessary with vessels within a defined geographical area within a VTS area.

3. Activities and tasks

- Communicate with ships as appropriate to the information service, navigation assistance service or traffic organisation service provided by the VTS by means of radiocommunication facilities.
- Operate equipment for communications, data collection, data analysis and establishment of a traffic image.
- In an information service transmit information at appropriate times, at the request of a vessel or when deemed necessary by the VTS, for example a sudden deterioration of weather conditions.
- In a navigation assistance service transmit such information as may be needed to aid a ship in difficult navigational or meteorological circumstances or in case of defects or deficiencies. The assistance to be given on request by a ship or when deemed necessary by the VTS.
- In a traffic organisation service, organise the vessel traffic within a waterway by means of waterway information, traffic monitoring and traffic regulations using, as necessary, nautical knowledge of the area concerned, the traffic image and a suitable marine information management system.
- Respond to emergency situations such as distress, marine pollution and other special circumstances defined for the VTS area. Where appropriate, co-ordinate communications for such circumstances.
- Communicate with ships, allied services and other agencies under emergency situations by means of radiocommunication and telecommunication.

4. Knowledge, skills, experience

VTS Personnel undertaking these activities and tasks should hold a current VTS Operator Certificate and an endorsement in the VTS Certification Log for “on the job” training at the VTS Centre at which the Operator is employed.

Annex 2 - VTS Supervisor job description

1 Introduction

The job description set out in this annex is intended to provide a broad guide to the tasks expected to be undertaken by a VTS Supervisor. VTS Authorities should develop detailed job descriptions for VTS Supervisor at each VTS centre where they are employed. The detailed job descriptions should be based on the services to be provided by the particular centre, the equipment available and the co-ordination which takes place with Allied Services.

2 Job purpose

To supervise the activities undertaken at the VTS with regard to the Information, Navigation Assistance or Traffic Organisation service provided.

To supervise a team which has responsibilities for the conduct of a vessel traffic service to the satisfaction of the VTS Authority as well as vessels and other users.

To ensure that the standards set by the Competent authority for operator qualifications continue to be met.

To ensure that proper co-ordination takes place between the VTS, allied services and other port facilities and services.

3. Activities and tasks

In addition to the activities and tasks appropriate to a VTS Operator:

- Ensuring that the service provided meets the requirements of both the users and the VTS Authority.
- Co-ordinating the interface between the VTS, allied services and other port facilities and services.
- Supervision of VTS Operators.
- Ensuring the efficient running of the VTS operations room.
- Carrying out an annual assessment of VTS Operators.
- In conjunction with “on the job” instructors, carrying out revalidation assessments on VTS Operators.

4. Knowledge, skills, experience

VTS Personnel undertaking these activities and tasks should hold a current VTS Operator Certificate and endorsements in the VTS Certification Log for advancement to VTS Supervisor and for “on the job” training at the VTS Centre at which the Supervisor is employed.

Unless recruited directly, VTS Supervisors should preferably have at least 3 years experience as a VTS Operator.

Annex 3 - Manager of a VTS Centre

1. Introduction

The management role of a VTS Centre may be discharged by an employee who does not hold a VTS qualification, but whose responsibilities are associated with, and require knowledge of, some aspects of VTS and the tasks performed by the VTS Centre.

In these circumstances the Job Description for the Manager should include some, or all, of the purposes, activities and tasks set out below. VTS Authorities should ensure that Managers of VTS Centres receive adequate training in the aspects of VTS appropriate to their responsibilities and introduce arrangements which ensure that the necessary level of competence in VTS is maintained.

2. Job Purpose.

To ensure that the VTS has adequate resources to undertake properly the responsibilities defined by the VTS Authority.

To recognise and develop opportunities for improving the service provided by the VTS.

3. Activities and tasks

- To understand fully the concept for the VTS as set out by the Competent Authority and the VTS Authority.
- To understand the needs of vessels using the VTS and to determine their requirements and expectations.
- To determine opportunities for further developing the VTS and to coordinate the response to these in order to provide improved service to vessels and other users.

Annex 4 - Aptitude Testing

Tests for the aptitude of a candidate VTS Operator could be carried out in the following manner:

1. Written test to measure:

- Vocabulary
- Numeracy
- Checking
- Coding
- Spatial conceptual ability

2. Group test of several candidates to enable an evaluation to be made of:

- Sensitivity
- Ability to take the initiative in group situations
- Ability to command authority and attention in the group
- Capacity for verbal expression

3. Simultaneous capacity

Candidates should have to divide their attention among four different tasks that engage their faculties of sight as well as hearing. Visually they should work with numbers while listening for important information among a mass of meaningless communications and performing routine desk tasks.

4. Interview aimed at judging:

- Power to take decisions and initiatives
- Judgement and responsibility
- Stability and tolerance for stress
- Ability to work with people

