Input paper: [[1]](#footnote-1) VTS47-3.1.14

Input paper for the following Committee(s): check as appropriate Purpose of paper:

**□** ARM **□** ENG **□** PAP **X** Input

**□** ENAV **X** VTS **□** Information

Agenda item [[2]](#footnote-2) 3

Technical Domain / Task Number 2 …………………………………

Author(s) / Submitter(s) IALA Secretariat

Review of IALA VTS Model Courses

# Summary

At VTS46, a breakout group of Working Group 3 commenced work on a review of IALA Recommendation R0103 and its associated model courses which is due for completion at VTS48. Within the report of VTS46, at section 11.4, an action is placed on the Chair of WG3 to integrate the work of the breakout group into a paper and to submit it to VTS47. This paper is attached as an appendix to this document.

# Discussion

## The IALA model courses related to VTS (with the exception of V-103/5) have not been reviewed for some time (since 2009). With the continued growth of VTS and Accredited Training Organisations worldwide, along with the forthcoming revision of IMO Resolution A.857(20), a review is now both timely and essential.

## Bearing in mind the workload of the VTS Committee in general, as well as the available pool of resource in Working Group 3, it is suggested that consideration may be given to alternate ways of progressing this work item.

## One method may be to replicate the recent successful strategy used for the review of IMO Resolution A.857(20). This method consisted of an intersessional meeting to develop a baseline document followed by a series of virtual meetings focussing on further development and fine-tuning prior to submission to the Committee for approval.

## A similar approach could be used for the review of the VTS model courses:

## The convening of an intersessional meeting (early 2020) to continue the work that will be undertaken at VTS47 to focus on finalising a detailed review of the course content of at least model course (with V-103/1 as the primary focus and others as appropriate) with a view to developing revised baseline documents, followed by;

## A series of virtual meetings to review and further develop the draft(s) with a view to submitting them to the following VTS Committee for approval (VTS48 or VTS49).

## The programme of meeting and events for 2020 would provide the opportunity for an intersessional meeting, a series of virtual meetings and then using VTS48 and possible breakout meetings during the IALA VTS and ENAV Symposium to maintain a positive momentum and finalise some or all of the revisions to the model courses.

# Action requested of the Committee

The Committee is requested to:

1. Note the input received from Working Group 3 at VTS46.
2. Consider the best method of work to progress the review and moderinisation of the VTS model courses and develop an associated work-plan.
3. **IALA V-103 review – initial thoughts (Working Paper**)

At VTS46 WG3 commenced a review of the IALA Recommendation V-103 (renamed R0103) and the associated model courses.

# Process

The review at VTS46 included a two-step process:

1. Brainstorming discussion on the implementation of V-103 (R0103) – what works, what doesn’t work so well, what might be changed in the future
2. Detailed review of the competence tables in V-103/1.

This work will be carried forward to VTS47.

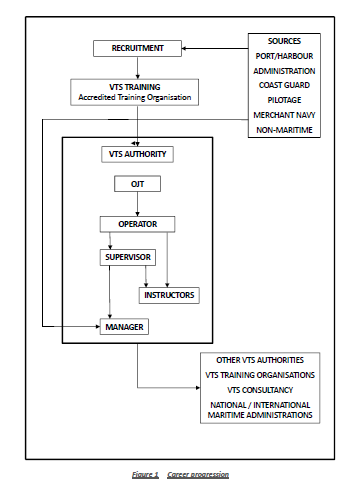
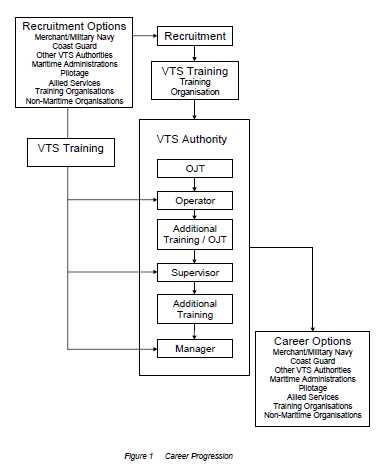
# R0103 thoughts

During the IALA VTS Voice Communications workshop a discussion was held on how different countries train VTS, with a focus on voice communications. The outcomes of this discussion are provided in a separate document.

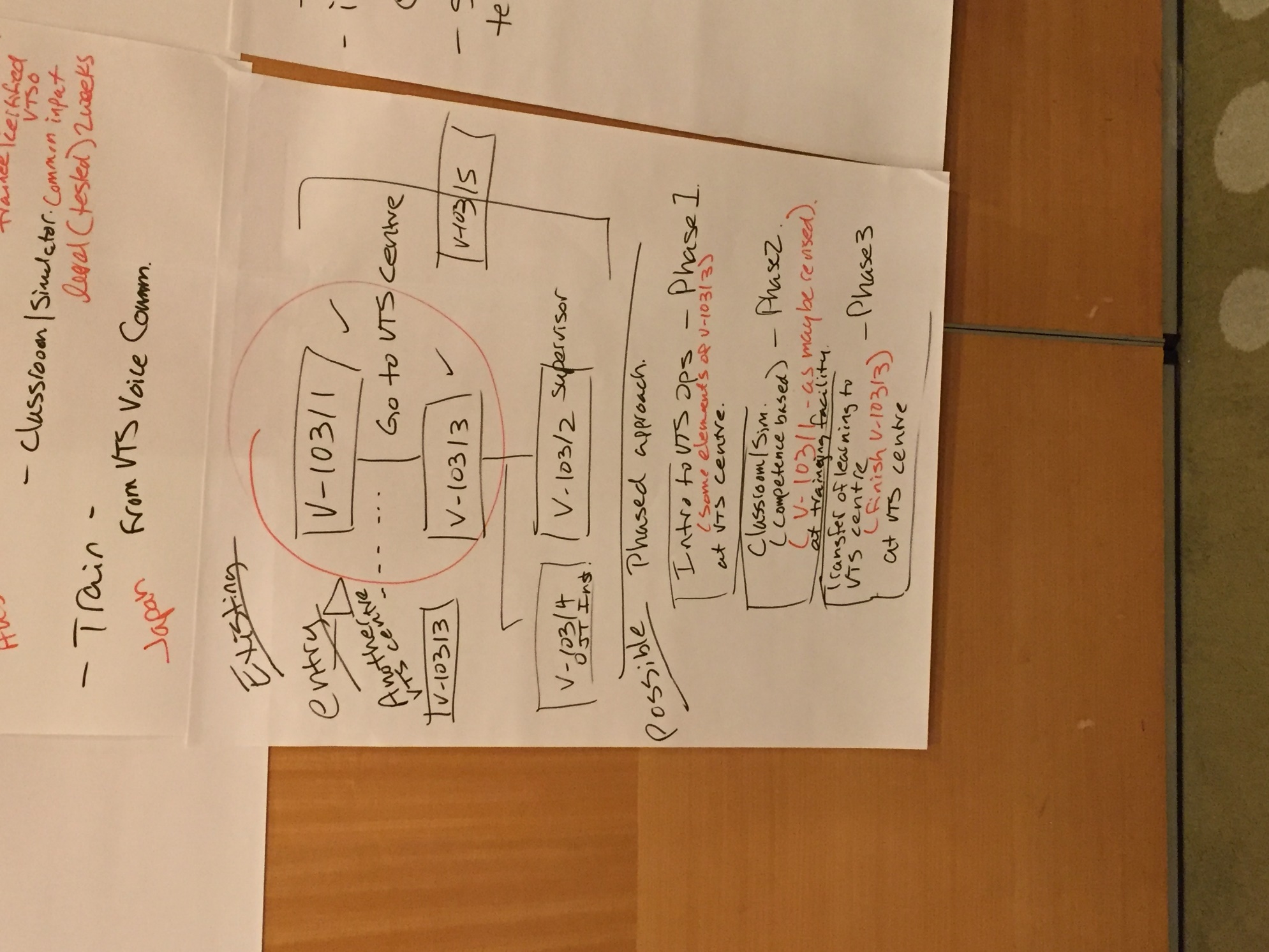
During VTS46 a general discussion noted that the essence of R0103 remains sound, however the link between the different training courses could be clearer, especially noting the introduction of V-103/5.

In reality, many countries have a pre-OJT time when candidate VTSOs spend some time in the VTS Centre, and working alongside an existing VTSO on circuit, before going to the V-103/1 course. Then there is further OJT provided following the V-103/1.

There are career progression diagrams presented in R0103 (ed 2.2) and V-103 (ed 2) which are slightly different. Neither clearly identifies the flow for the training courses.

Based on the description presented in V-103, the process for obtaining VTS training qualifications were sketched on a flip chart. After discussion, and possible approach with an initial phase on-the-job was also sketched.



The good points of the V-103 include the fact that it can be audited and accredited, with specific course provision and the accreditation Guideline 1014. The approach enables the hiring of persons with or without maritime background, with an emphasis on the outcome (competence) level to meet the requirements of the job of the VTSO.

# V-103/1 Model Course – Competence Table Review

While the VTS Recommendation and model courses were reviewed at a workshop in 2009, there has not been a detailed review of the current competence requirements, tasks and skill sets, for VTS since the work carried out in the late 1990’s. While this was quite detailed and very thorough, the role of the VTSO has evolved over time and it would be good to carry out a further analysis.

|  |  |
| --- | --- |
| Good Points of V-103/1 | Possible concerns of V-103/1 |
| * Provides a framework to develop a course * Based on the actual VTSO competence requirements / tasks (at the time of development) * Enables accreditation against set criteria (using G1014) * Provides the same base level for all VTSOs * Focuses on outcomes / competence levels rather than income (existing qualifications). This enables hiring both mariner and non-mariner backgrounds, noting the training requirements change. | * Some items may not be relevant in all countries that now have VTS * Some references / equipment identified (especially module 3) may be out of date (telex for example) * Training process means that some people who do well at the initial training (V-103/1) don’t do well on the job, or don’t like the job and quit (waste of training time and dollars) * There may be different interpretations of the standard and module content, leading to inconsistencies. * No standard approach to audit / accreditation. * Some experience of people working at VTS personnel without VTS training. |

At VTS46 an initial review of the competence tables from the existing IALA V-103/1 was carried out. This work included identifying content in the V-103/1 course using the following criteria:

1. critical to keep (still valid)
2. important to keep
3. nice to have
4. no longer required
5. not sure

Due to existing work on VTS Voice Communications, Module 1 was not reviewed. The results are presented as an additional column in the relevant competence tables.

MODULE 2 - TRAFFIC MANAGEMENT

DETAILED TEACHING SYLLABUS OF MODULE 2

1. Detailed teaching syllabus – Traffic management

| Subjects / Learning Objectives | Relevance (review at VTS46) |
| --- | --- |
| Regulatory requirements |  |
| *Identify the legislative requirements relating to the VTS area and protection of the marine environment* | 1 |
| International regulations  Sources of literature on international legislative requirements  (IMO Resolution 857(20); Ship reporting systems; carriage of dangerous goods; World VTS Guide; etc. | 1  Revise – SOLAS Convention; amend to reflect new Resolution; delete World VTS Guide |
| National regulations, including local bye laws  Sources of national legislation and promulgation  Bye laws  Notices to Mariners and other nautical publications | 1  Confirm spelling of By-law or Bye Law |
| Legal liabilities of VTS functions  Extent of competence, authority and responsibility  Competent authority  VTS authority  Personnel | 1  Revise to be VTS Personnel |
| Carriage of relevant ship certificates | 4  Note – ISPS / other processes cover this |
| Roles and responsibilities |  |
| *Explain the roles, responsibilities of and relationships between ship masters, marine pilots, VTS and allied services* | 1 |
| Ship masters  Responsibility of the ship master  Responsibility of the ship master to VTS | 1 |
| Marine pilots  Responsibility of the pilot to the ship master  Responsibility of the pilot to VTS | 1 |
| VTS  Responsibility to the master and pilot  Responsibility of VTS to allied services | 1 |
| Allied services  Knowledge of allied services (i.e. harbour master, port authority)  Roles of allied services | 2 |
| VTS environment |  |
| *Demonstrate a knowledge of the VTS operational area, including geographical features, traffic routing measures and aids to navigation* | 1 |
| Area limits, boundaries, separation zones, shipping lanes and channels | 1 |
| Prohibited or dangerous areas, safety zones, anchorages and restricted areas | 1 |
| Traffic separation schemes | 1 |
| Traffic separation criteria | 1 |
| Geographical constraints | 1 |
| Aids to navigation (e-navigation, virtual aids to navigation) | 1  Note developments in e-navigation; mobile AtoN. |
| **Principles of waterway and traffic management** |  |
| *Demonstrate a knowledge of the procedures for maintaining a safe and efficient waterway* | 1 |
| Planning  Routeing  Channel geography  Traffic restriction areas  Anchorage areas  Obstructions  Type of traffic  Ship characteristics  Cargo characteristics  Information  Traffic  Waterway (Notice to shipping, regattas)  Environmental (visibility, waterspouts, dust storms, pollution) | 1 |
| Risk management  Controllable risks  Experience of VTS Operators  Utilisation of equipment  Contingency plans/pollution  Uncontrollable risks  Geography  Meteorological factors  Hydrographic factors  Traffic congestion  Procedures to mitigate risks | 1 |
| Allocation of space  Ships domain  Authorising ship movements  Allocation of priorities | 1  Instead of ‘allocation’ perhaps ‘utilisation’ of waterspace  Concept of waterspace management |
| Criteria which determine the parameters for the safe passage of shipping  Water reference level  Tide gauges  Correlation between predicted and actual water levels  Allowance for delayed manoeuvres  Safe underkeel clearance  Draught measurements vertical ship movements, allowance for squat and swell  Safety margins in rock and soft sea-bed conditions  Net underkeel clearance  Gross underkeel clearance, including allowance for weather; exposure and topography | 1  1 |
| Safe air draft  Factors affecting and sources of information for calculating air draft  Safe channel width  Principles of devising a safe width under calm and adverse conditions  Limiting factors in precise navigation  Adequacy of safe underkeel clearance across channel width  Calculation of safe channel or fairway width  Shipping movements  Movements authorised only when safe criteria have been determined and conditions satisfactorily met | 1  1  1 – Some discussion on this – not sure what it was actually meaning (TBD) |
| **Traffic monitoring and organisation** |  |
| *Demonstrate a knowledge of traffic patterns, sailing/route plans and perform situational analysis required to maintain a safe and efficient waterway* | 1 |
| Traffic patterns  Normal traffic patterns  Non-routine items affecting traffic patterns (rogue vessels, weather) | 1 |
| VTS sailing or route plan  Developing a plan to ensure safe and efficient movement of vessel traffic | 5 – to be discussed  Link with voyage passage plan? |
| Situation analysis  Conflict assessment  Spatial separation  Determination of relevant traffic  Participating/non-participating traffic  National and international regulations  Local procedures  Tools for determining relevant traffic - risk of collision, unclear intentions, non-routine action, blind corner etc | 1 |

MODULE 3 - EQUIPMENT

DETAILED TEACHING SYLLABUS OF MODULE 3

1. Detailed teaching syllabus – Equipment

| Subjects / Learning Objectives | Relevance (review at VTS46) |
| --- | --- |
| Telecommunications |  |
| Fax  Explain and demonstrate the transmission and reception of facsimile message | 3 |
| Telephone  Describe the operation of different telephone systems/technologies and their functionalities  State the necessity of prioritisation | 3  Refer to Mobile Phone |
| Telex  Explain the fundamental operation of telex  Describe how to transmit/receive telex messages | 4 |
| E-mail  Explain the fundamentals electronic mail  Demonstrate how to transmit/receive E-mail | 3 |
| Electronic messaging  Discuss and explain the evolving electronic messaging system | 2  AIS message, ASM, etc. |
| Radar, audio, video and other sensors |  |
| Radar  Describe the basics of coastal radar and its applications to VTS  Coastal radar concepts  Application of coastal radar to VTS  Sensor fusion  System warnings  List the features of generic VTS radar display  Detection, acquisition and tracking  VTS traffic image warnings | 2 |
| Describe the function and different types of audio equipment  VHF radio  Telephone system | 1 |
| Describe the function and different types of video equipment  Close circuit (CCTV)  Low light (LLTV)  Infra-red | 2 |
| Describe the function of and different types recording/replay equipment  Audio recording  Video recording  Data recording  Synchronization for replay | 2 |
| Describe the application of meteorological and hydrological equipment  Tide gauges - remote height of tide indicators  Tidal stream indicator - remote indications  Barometer  Temperature/humidity indicators  Anemometers  Visibility | 3 |
| VHF/Direction finding (VHF/DF) |  |
| Describe the purpose and basic principles of VHF/Direction finding | 2 |
| State the accuracies of VHF/DF bearings | 2 |
| Tracking systems |  |
| Explain the principles of radar tracking and Automatic Radar Plotting Aid (ARPA)  ARPA theory  Vector analysis  Limitations and capabilities  Tracking tags  Information available  Limitations/dangers | 1  Note – ECDIS link |
| Explain the application of manual tracking systems  Strips  Cards  Electronic strips and information management  Ship movement reports | 5 |
| Describe the application of Automatic Identification Systems (AIS) for tracking  Modes of operation of AIS | 1 |
| Information management |  |
| Explain and demonstrate the use Vessel Traffic Management Information Systems (VTMIS)  Introduction to VTMIS  Co-ordination of information with users/allied services | 2 |
| List and describe the relevance of vessel information  Prioritising of participating vessels  Anticipating calls using radar images  Information from ships - name, call sign, type, position, speed, destination, ETA, special reports  Information to ships - content, timely, relevant | 2 |
| Identify and describe the different allied services within a VTS area  Information from allied services  Information to allied services - content, timely, relevant | 2 |
| Equipment performance monitoring |  |
| Describe the expected normal operating parameters of equipment  Describe and demonstrate the different troubleshooting methods | 2  5 |
| Evolving technologies |  |
| Describe new technologies, as appropriate | 4 |

MODULE 4 - NAUTICAL KNOWLEDGE

DETAILED TEACHING SYLLABUS OF MODULE 4

1. Detailed teaching syllabus – Nautical knowledge

| Subjects / Learning Objectives | Relevance (review at VTS46) |
| --- | --- |
| Chartwork |  |
| Chart information and terminology  Demonstrate knowledge of charts and the information contained thereon  Finding positions on the globe - lat/long, great circle  Chart projections and geodetic datums  Use of charts in VTS  Identify and describe chart symbols  Symbols associated with VTS  Importance of symbols in a VTS area  Importance of symbols to the mariner | 3  3  Note – delete great circle  2 |
| Plotting positions on paper charts  Demonstrate the basic plotting instruments  Parallel rulers  Compass/dividers  Loran-C interpolations, if applicable  Demonstrate the ability to plotting on charts (using various projections as appropriate)  Using parallel rulers  Using parallel rulers and compass/dividers  Measuring distances on charts | 3 |
| Explain the use of Lines of Positions (LOPs)  Bearings  Ranges  Loran-C, if applicable  Combination of LOPs  Definition of “cocked hat”  LOPs given from ships and calculated from shore positions | 3 |
| Perform exercises on speed/distance/time calculations  Introduction of S, D, T formula (S x T = D)  Use of formula in simple situations  Use of formula in complex situations | 2 |
| Explain the theory and practice use of true and magnetic courses  Perform exercise in laying of a true course  Using parallel rulers to compass rose  Using parallel rulers to line of longitude on Mercator charts  Reading courses off charts  Perform exercise in Dead Reckoning (DR) positions  Accepted symbology used on charts  Calculating and measuring for DR positions  Perform exercise in compass and magnetic courses  Definition of variation, deviation and compass error  Problems associated with using magnetic compass or true courses from shore-based position | 3  4  4  4 |
| Describe the importance of passage planning  The requirement for a vessel to create and use a passage plan  The four key elements of a passage plan – appraisal, planning, execution and monitoring  Ascertaining waterway information using charts and symbols  Formulating plans of action using information provided, chart information, tidal information, etc.  Contingency planning | 3  2 |
| Describe the effect of tides and tidal streams  Introduction to tides and tidal stream  Explain the definition of terms relating to tides and tidal streams  Chart datum  Spring/neap tides  Ebb/flow/slack/eddies  Set/drift/rate  Diurnal/semi-diurnal  Demonstrate the use of tide and current tables  Information contained in tide tables  Reading tide tables  Reading current tables  Overview of calculating intermediate heights and times  Overview of primary and secondary ports  Demonstrate the method of using of tidal streams in calculating an Estimated Position (EP)  Review of Dead Reckoning Position (DR)  Explanation of EP  Effect of tides and currents  Effect of wind/leeway | 2  2  2 |
| Correcting paper charts and publications  Introduction to Notices to Mariners  Introduction to written Notices to Mariners  Introduction to broadcast notices to shipping, including fishing vessels  Methods of correcting publications  Procedures for corrections  Recording corrections  Methods of correcting paper charts  Procedures for corrections  Recording corrections  Temporary and preliminary corrections | Note – include ENC, link to ECDIS  2  4  3 |
| Collision regulations |  |
| Cite and explain the International Regulations for Preventing Collisions at Sea  Definitions of specific terms in the Collision Regulations  Application of the Collision Regulations  Application for ships  Application as pertains to VTS  Enforcement of regulations  Basic steering and sailing rules  International regulations  National specifications and variances  Conduct of vessels in specific conditions  Conduct in narrow channels  Conduct in Traffic Separation Schemes  International Distress Signals  Annex IV to the Collision Regulations  Basic lights, shapes and sounds as described in the Regulations  Description of the contents of Annexes I and III, and parts E and F | 1 |
| Aids to Navigation |  |
| Describe international maritime buoyages  Introduction to the International Maritime Buoyage System  Lateral systems (IALA A & B)  Cardinal systems  Implications of various systems | 1 |
| Regulations pertaining to buoyage systems  Characteristics of floating aids  Types of buoys  Placement of buoys  Fundamental rules for safe navigation  Chart symbols and abbreviations for floating aids  Numbering of aids  Topmarks  Characteristics of fixed aids  Day beacons  Light stations  Ranges  Sector lights  Leading lights  Fog signals | 1  1 |
| Explain the functions of radar beacons  Introduction to radar beacons (RACONS /Ramarks)  Purpose  Special characteristics  Recognition and identification  Implications of radar beacons (RACONS/Ramarks)  Limitations  Users | 1 |
| Explain the theory and use of satellite and differential satellite position fixing systems  Introduction to global navigation satellite systems (GNSS)  Purpose of GNSS and DGNSS  Types of GNSS and DGNSS  Implications to VTS  Limitations | 1 |
| Explain the theory and use of virtual aids to navigation  Introduction to and purpose of virtual aids to navigation | 1  Note – link to module 2 – virtual AtoN reference |
| Navigational aids (shipborne) |  |
| Explain the theory of radar and demonstrate its operation  Use of radars on board ships  Fundamentals of RADAR theory  Radar controls  Factors affecting radar detection  Limitations of ships radars  Head up/North up display  Relative/true motion  Factors affecting interpretation  Introduction to tracking systems and ARPA  ARPA features and use of radar for collision avoidance  Regulations and acts governing performance and carriage of radar | 1 |
| Explain the theory and use of gyro and magnetic compasses  Use of magnetic compass on board vessels  Sources of error  Corrections  Reliability  Use of gyro compass on board vessels  Accuracy  Corrections  Reliability | 1 |
| Explain the theory and use of other navigational aids  Introduction to echo sounders  Introduction to speed logs  Principles of speed logs  Accuracy of speed logs  Introduction to ECDIS and ECS  Means of displaying information  Symbology  Uses and limitations  Chart datums | 1 |
| Shipboard knowledge |  |
| List and explain the ship terminology - technical  Ship construction terms  Ship dimensions - i.e. LOA, LBP, beam, draught, air draught  Hull structure - i.e. types of bows, sterns  Loadlines draught marks | 1 |
| List and explain the ship terminology - nautical phrases  Directions/relative bearings  Numbers  Mooring/anchoring terms | 1 |
| List and describe the types of vessels  General cargo ships  Tankers  Bulk carriers  Combination carriers  Container ships  Passenger ships  Ro-ro ships  Fishing vessels  Offshore vessels  Rigs  Offshore supply  Offshore tugs  Tugs  Pilot boats  SAR vessels  Seaplanes  WIG  Ships operated by allied services | 2  Note – could be linked with the following item – types of vessels and cargo together |
| List and describe the types of cargo  General cargo  Refrigerated  Liquid  LPG/LNG  Bulk  Containers  Ro-ro  Fish  Livestock  Dangerous goods | 2 |
| List and ship stability  Introduction to ship stability  Definitions of heel, list and trim  Factors influencing ship stability  Recognising dangerous situations regarding ship stability | 2 |
| Explain the theory and practice of ship handling  Effect of pivot point on ship handling  Line of approach  Stopping characteristics  Turning characteristics  External forces on ship handling – winds and tides  Effect of interaction and squat  Vessel manoeuvrability  Different types of rudder  Different types of propeller  Thrusters  Use of tugs | 2 |
| List and describe different propulsion systems  Introduction to propulsion systems  Diesel, diesel electric  Gas turbine  Steam  Jet | 3 |
| Explain the list of external forces on vessels  Meteorological elements  Effects of wind on safety of waterway and ship manoeuvrability  Effects of reduced visibility on safety of waterway  Effects of high and low pressure systems on water height and depth  Oceanographic factors  Effects of tides and currents on safety of waterway and ship manoeuvrability  Application of COLREGS with regards to tides and currents  Planning waterway movements taking into account tides and currents | 3 |
| Describe vessel bridge procedures  Maintaining a navigational watch  Under routine circumstances  In pilotage waters  In non-pilotage restricted waters  Response to emergencies which arise in a VTS area  Regulations governing transit of vessels with regard to special circumstances  Expected actions on board vessels during special circumstances  Bridge operations (arrival & departure)  Berthing and unberthing  Anchoring | 2 |
| Port operations and other allied services |  |
| Explain pilotage operations  Introduction to pilotage operations  Pilotage waters  Responsibilities of pilots  Master/pilot/VTS relationship | 1 |
| Describe port operations including contingency plans  Overview of port operations  Interaction of all agencies within a port  Responsibilities of harbour masters and berthing masters  Clearance procedures  Intermodal transport  Regulations and acts in effect within harbour limits  Contingency plans  Pollution  SAR  Grounding  Salvage  Fire  Security  Health | 1  1 |
| Cite and explain the ISPS code with relation to ship and port security  Overview of ISPS code  Port policing  Interaction with municipal, national and international security  General overview of security of VTS centres and outstations | 1 |
| Explain the organisation of tugs and towing  The organisation of tugs within a port | 2  See also “Ship handling” |
| Explain the role of ships agents  General duties of ships agents  The role of ships agents | 2 |

MODULE 5 - COMMUNICATION CO-ORDINATION

DETAILED TEACHING SYLLABUS OF MODULE 5

1. Detailed teaching syllabus – Communication co-ordination

| Subjects / Learning Objectives | Relevance (Review at VTS46) |
| --- | --- |
| General communication skills | Note – may link with work on VTS Voice Communication Guideline |
| *Possess the knowledge of the basic principles of communication and coordination.* |  |
| Describe active listening skills  The process of interpersonal communication  Effective team communications  Empathy | 1  5 |
| State the importance of clear, concise, accurate, timely and meaningful communications  Reading-back received message  Breaking message into smaller components  Rephrasing message | 1 |
| Demonstrate verbal and non-verbal communications  Voice inflection  Non-verbal signals or symbols – internal  Non-verbal signals or symbols – external | 5 – not sure |
| Identify words that have multiple interpretations and could negatively impact communications  Language differences, both cultural and regionally  Alternative meanings of words  Cultural aspects in decision making processes – potential impacts  Cultural aspects in understanding of messages – potential impacts | 1 |
| Communications |  |
| Demonstrate and explain data collection  Formal messages - ship reporting  Ship-ship  Ship-shore  Shore-ship  Shore-shore  Electronic data exchange  Ship-ship  Ship-shore  Shore-ship  Shore-shore | 1  2 |
| Explain the use of a communications plan of action  Define as routine / non-routine  Define emergencies – incidents / accidents  Identify objectives  Define resources  Formulate plan in accordance with contingency plan  Consider “worst case” / “what if” scenario  Modify plan or objectives as necessary | 1 |
| Demonstrate the use of messages and reports  Formal messages to vessels: information/warning/advice/instruction  Phrasing  Timing  Content  Formal messages - waterway information: information/warning/advice/instruction  Phrasing  Timing  Content  Formal messages - allied services: information/warning/advice/instruction  Phrasing  Timing  Content | 1 |
| Special reports  Phrasing  Timing  Content  Informal messages  Phrasing  Timing  Content | 1 |
| Log and record keeping |  |
| List and describe logs and records used by VTS  Accuracy of logs & records  Factual  Complete  Chronological  Legible  Standardised | 1  5 (standardised) |
| Retention of logs & records  Manual: as per national statutory requirements  Electronic: as per national statutory requirements  Legal implications  Statistical process control  Local/national/international database for accident investigation | 1 |
| Describe the methods of keeping a log  Manual log keeping  Introduction to manual logs  Purpose  Benefits  Difficulties  Methods of recording  Hand written  Printed copy  Filing  Purpose  Storage  Access  Electronic log keeping  Introduction to electronic logs  Purpose  Benefits  Difficulties  Methods of recording  Voice  Radar/video  Electronic data input devices  Filing  Back-up arrangements  Storing | 1  1  1 |
| State the purposes and requirements for statement and report writing  Statutory  Electronic and manual  Legal implications | 1 |

MODULE 6 - VHF RADIO

DETAILED TEACHING SYLLABUS OF MODULE 6

1. Detailed teaching syllabus – VHF radio

| Subjects / Learning Objectives | Relevance (Review at VTS46) |
| --- | --- |
| Radio operator practices and procedures |  |
| *Describe and perform exercises on radio operator practices and procedures* | *1* |
| GMDSS Restricted Operator’s Certificate (ROC)  Internationally recognised radio certification | 1 |
| VHF radio systems and their use in VTS | 1 |
| *Describe VHF radio systems and their use in VTS* | *1* |
| Frequencies in the international VHF maritime mobile band  Single frequency and two frequency channels  Simplex working  Semi duplex  Duplex working  Port operation and ship movement frequencies  Distress, safety and calling frequencies  Radiotelephone  DSC  Automatic Identification Systems (AIS)  Introduction to AIS  Application of AIS to VTS | 1 |
| Restrictions on the use of Radio Regulations (RR) Appendix S18 frequencies | 1  Note – reference – ITU Radio Regulations confirm / update |
| National frequencies assigned to VTS  Assignment and use of single and two frequency channels for VTS purposes  National restrictions on the use of RR Appendix S18 frequencies | 1  ITU Radio Regulations |
| Operation of radio equipment |  |
| *Describe and demonstrate the operation of radio equipment* | *1* |
| Introduction to basic VTS VHF radiotelephone, DSC and AIS equipment  Principles, controls and operation of VHF  Channel spacing  Modulation  Range | 1 |
| Principles, controls and operation of DSC  Format of a transmission sequence  Message composition  Error checks  Principles, controls and operation of AIS  Format of a transmission sequence  Message composition  Automatic and manual modes | 1 |
| Communication procedures, including SAR |  |
| *Describe and demonstrate the communication procedures, including SAR* | *1* |
| VHF Radiotelephone procedures  Distress, urgency, safety and calling  DSC communication procedures using VHF  Distress, urgency, safety and calling  AIS communication procedures using VHF  Distress, urgency, safety and calling  Equipment failure and channel saturation | 1 |

MODULE 7 - PERSONAL ATTRIBUTES

DETAILED TEACHING SYLLABUS OF MODULE 7

1. Detailed teaching syllabus – Personal attributes

| Subjects / Learning Objectives | Relevant (Reviewed at VTS46) |
| --- | --- |
| Interaction with others and human relation skills |  |
| *Have the knowledge and ability to conduct their duties in a manner which conforms to accepted principles and procedures.* | 1 |
| Describe public relations policy  General introduction to the maintenance of good public relations.  The media and press and their requirements.  Information that can be provided to others and the manner of its release.  Dealing with traumatised individuals. | 3  4 |
| Describe how to establish and sustain working relationships  Internal  External  Importance of maintaining the trust of all VTS stakeholders  Ship masters  Pilots  Other authorities and organisations  Allied services  Other services | 2 |
| Identify methods of conflict resolution  When and how to intervene  Internal  External | 3 |
| Describe the benefits of team working skills  Characteristics of leaders and followers  Adaptability/ flexibility  Diplomacy  Ability to analyse the role of VTS  Decision making process  Taking initiative  Prioritising tasks  Thinking critically  Communicating with team members  Assertiveness | 2 |
| Responsibility and reliability |  |
| Explain the role of health and safety performing the VTS mission  Personal safety  Safety of VTS stakeholders  Personal health  Causes of stress  Managing work related stress  Managing personal stress  Substance abuse | 2 |
| Cite the reasons for time management  Relief of watch  Planning  Reducing fatigue | 2 |
| Describe how professionalism and mission focus is important  Working climate  Team spirit  Awareness of personal circumstances | 2 |

MODULE 8 - EMERGENCY SITUATIONS

DETAILED TEACHING SYLLABUS OF MODULE 8

1. Detailed teaching syllabus – Emergency situations

| Subjects / Learning Objectives | Relevance (Reviewed at VTS46) |
| --- | --- |
| International, regional and local regulations |  |
| *Explain national and international regulations and procedures relating to emergency situations, security alerts, pollution response and special circumstances* | 1 |
| Scope of responsibilities and authority to act in emergency situations  (local/regional/national/international) | 1 |
| Local regulations, bye laws  Supporting and allied services  Define the supporting and allied services which are available  Define the assets which are available for deployment | 1 |
| **Contingency plans** |  |
| *Describe the preparation and implementation of contingency plans* | 1 |
| Introduction, preparation and implementation of contingency plans  Collisions  Groundings  Marine pollution (air/water)  Fire  Hazardous cargoes  SAR incidents, including man overboard  Other contingency plans including, but not limited to the following: medical, casualty evacuation, special weather conditions  Organisations to be alerted  Simultaneous emergencies | 1 |
| Describe thepreparation and use of checklists  Introduction and use of checklists  Description of a checklist  Authority to prepare, implement, issue and update checklists | 1 |
| Prioritise and respond to incidents |  |
| *Explain the steps in classification of an emergency situation and explain the activation of the relevant contingency plans* | 1 |
| Prioritise incident:  - Data collection  - Evaluation  - Classification of incident  Response planning and action:  - Commence alerting procedures  - Maintaining safe and efficient flow of traffic  - Co-ordination with, and support to, allied services  - Updating of situation reports  - Navigational warnings (if required)  May include but not be limited to:  - Collisions  - Groundings  - Marine Pollution  - Fire  - Hazardous cargoes  - SAR incidents  - Other special circumstances | 1 |
| Record activities concerning emergencies |  |
| *Describe objectives and procedures for recording activities during emergency situations, including methods, the information recorded and security of information* | 1 |
| Objective of recording activities during emergency situations  Introduction to methods of recording activities during emergency situations  Information which should be recorded  Security of recorded information | 1 |
| Maintain a safe waterway throughout emergency situations | 1 |
| *Describe the actions required to ensure the protection of the VTS area and, as far as practicable, maintain a safe and efficient flow of traffic* | 1 |
| Maintaining traffic management and monitoring procedures  Alternative routing arrangements  Diversionary procedures (traffic in immediate incident area)  Anchorage areas  Introduction of emergency speed restrictions  Emergency alterations to VTS sailing/route plans and passage plans | 1 |
| Internal/external emergencies | 1 |
| *Describe the procedures for dealing with internal/external emergencies affecting normal operations of a VTS centre* | 1 |
| Procedures for individual emergencies  Checklists  Maintenance of VTS Operations  Communications  Traffic image | 1 |

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Leave open if uncertain [↑](#footnote-ref-2)