

PSSVTS104

Apply nautical knowledge to Vessel Traffic Services operations



Overview

This standard covers the competence required to apply nautical knowledge to Vessel Traffic Services operations.

A Vessel Traffic Services Operator is required to carry out chart work in the context of coastal navigation. They need to know and understand the International Regulations for Preventing Collisions at Sea and the responsibilities that vessels have in complying with these rules. The Vessel Traffic Services Operator needs to be aware of and appreciate the various types of marine aids to navigation, their advantages, limitations and locations within the Vessel Traffic Services area.

The Vessel Traffic Services Operator is in communication with and will be managing vessel traffic. The Vessel Traffic Services Operator should be familiar with ship terminology, types of ship and the various cargoes they carry, basic ship stability and ship manoeuvring and handling. The Operator also needs to be aware of the duties and responsibilities of a ship's master, other members of the bridge team and the pilot and the contribution that each person makes in the safe navigation of the vessel.

The Vessel Traffic Services Operator is an integral part of port operations and needs to be able to identify the various stakeholders involved in port operations, know how they interact with the Vessel Traffic Services and be aware of the contribution that each stakeholder makes in promoting the safety and efficiency of the port.

There are six elements in this standard:

- 1 Interpret nautical charts
- 2 Apply the International Regulations for Preventing Collisions at Sea
- 3 Apply knowledge of Marine Aids to Navigation
- 4 Apply knowledge of Shipboard Navigational Aids
- 5 Apply knowledge of ship construction and handling terminology

Target Group

This standard applies to an authorised Vessel Traffic Services Operator who has a duty to ensure the safety of navigation and protection of the environment within their area.

PSSVTS104

Apply nautical knowledge to Vessel Traffic Services operations

Performance criteria

Interpret nautical charts

You must be able to:

- P1 differentiate between different chart projections and datum
- P2 read and interpret the information displayed on a nautical chart
- P3 recognise the various symbols used on a chart and the importance of the symbols to mariners and Vessel Traffic Services
- P4 find geographical positions on the chart given either, a latitude and longitude, or a range and bearing from a landmark or beacon
- P5 use chart plotting instruments to plot bearings, position lines, positions and measure distances on charts
- P6 read courses off a chart using parallel rulers
- P7 lay courses on a chart using parallel rulers
- P8 correctly extract and interpret information contained in Notices to Mariners
- P9 correct charts and publications using Notices to Mariners and other available information
- P10 calculate and measure Dead Reckoning position and Estimated Position on charts
- P11 use speed / time / distance formula ($S \times T = D$) in simple and complex situations
- P12 take account of the difference between true and magnetic courses
- P13 take account of the problems associated with using magnetic compass courses for plotting positions in the Vessel Traffic Services Centre
- P14 use chartwork skills, including Dead Reckoning position, Estimated position, and interpret charts and symbols to ascertain waterways, project traffic flows and formulate plans
- P15 read information contained in tide tables and tidal stream atlas
- P16 calculate intermediate heights and times of tide at primary and secondary ports

Apply the International Regulations for Preventing Collisions at Sea

You must be able to:

- P17 apply the International Regulations for Preventing Collisions at Sea, including during the conduct of vessels in narrow channels or in traffic separation schemes
- P18 identify lights, shapes and sound signals, international distress signals and obligations of vessels
- P19 identify any local variances to the International Regulations for Preventing Collisions at Sea
- P20 enforce the International Regulations for Preventing Collisions at Sea in accordance with local law and standard operating procedures

Apply knowledge of Marine Aids to Navigation

You must be able to:

- P21 identify all the buoys and beacons including sector and leading lights within or about the Vessel Traffic Services area and their limitations
- P22 identify the function, advantages and limitations of aids in the Vessel Traffic Services context

PSSVTS104

Apply nautical knowledge to Vessel Traffic Services operations

Apply knowledge of shipboard Navigational Aids

- You must be able to:*
- P23 identify the function, advantages and limitations of shipboard navigational aids

Apply knowledge of ship construction and handling terminology

- You must be able to:*
- P24 identify and explain: Length Over All (LOA), Length Between Perpendiculars (LBP), beam, draught, air draught, principle types of hull structure, loadline and draught marks, mooring/anchoring terms
 - P25 identify different types of vessels in the marine environment
 - P26 identify the various types of cargoes, including dangerous goods, transported on board ship
 - P27 recognise the factors that influence ship stability
 - P28 recognise dangerous situations regarding ship stability
 - P29 identify the internal and external influences that impact on the handling of a ship
 - P30 identify the features and limitations of the various vessel propulsion systems

PSSVTS104

Apply nautical knowledge to Vessel Traffic Services operations

Knowledge and understanding

You need to know and understand:

- K1 the hazards and risks of the workplace that may affect people and the environment
- K2 how to make and apply decisions based on the assessment of risk
- K3 how to apply practices that maximise the health, safety and welfare of self and others in the workplace
- K4 the national and international regulations, statutory authority, codes of practice and industry good practice in relation to Vessel Traffic Services and the role of Vessel Traffic Services Operator
- K5 your organisation's policies, procedures and working practices relevant to Vessel Traffic Services operations
- K6 the different roles within Vessel Traffic Service operations, their priorities and responsibilities
- K7 lines and methods of communication/reporting in the workplace
- K8 vessel movement and data recording equipment, their operating principles and how they are maintained
- K9 how to communicate clearly and effectively with the range of people involved
- K10 the operating procedures for different communication equipment and types of services used in Vessel Traffic Services
- K11 the procedures for chart correction
- K12 the definitions of the terms 'variation', 'deviation', and 'compass error'
- K13 the definition of the term "cocked hat" and its limitations
- K14 the definition of the terms 'variation', 'deviation', and 'compass error'
- K15 the definition of the terms relating to tides and tidal streams
- K16 the effects of meteorological and hydrological external forces on ships
- K17 vessel bridge procedures
- K18 shipboard safety management systems, and how these should be maintained during routine navigational watch in pilotage and non-pilotage water, navigating within and in the vicinity of a Vessel Traffic Services area, berthing and un-berthing and anchoring
- K19 expected actions on board vessels during special circumstances and during emergency situations
- K20 standard operating procedures to respond to shipboard emergencies that arise in a Vessel Traffic Services area
- K21 the pilotage operations procedures and practice in the Vessel Traffic Services area
- K22 the types, capabilities and limitations of tugs used in port operations the principles and risks associated with towing operations

PSSVTS104

Apply nautical knowledge to Vessel Traffic Services operations

Additional Information

Scope

Terms relating to tides and tidal streams include:

- 1 chart datum
- 2 height of tide
- 3 spring tide
- 4 neap tide
- 5 ebb
- 6 flow
- 7 flood
- 8 slack
- 9 eddies
- 10 set
- 11 rate
- 12 drift
- 13 diurnal
- 14 semi-diurnal
- 15 storm surge

Aids in the Vessel Traffic Services to include:

- 1 Radio telephone equipment including Global Maritime Distress Safety Systems (GMDSS)
- 2 Electronic Navigation Chart
- 3 Geographic Information System
- 4 Automatic Identification System (AIS)
- 5 shore-based radar + tracking system
- 6 ship-based radar
- 7 Automatic Radar Plotting Aid (ARPA)
- 8 gyro and magnetic compass
- 9 echo Sounder
- 10 speed log
- 11 satellite and terrestrial position fixing systems (e.g. Global Positioning System, Long Range Aid to Navigation(e-LORAN))
- 12 Local Area Augmentation (e.g. Differential GPS)
- 13 Electronic Chart Display and Information System (ECDIS)
- 14 Integrated Bridge Systems (IBS)
- 15 Portable Pilot Units (PPU)
- 16 Closed Circuit Television (CCTV)
- 17 Facsimile

Navigational aids include:

- 1 ship-based radar
- 2 Automatic Radar Plotting Aid (ARPA)
- 3 Gyro and magnetic compass
- 4 Echo sounder
- 5 Speed log
- 6 Satellite and terrestrial position fixing systems (e.g. Global Positioning

PSSVTS104

Apply nautical knowledge to Vessel Traffic Services operations

- System, Long Range Aid to Navigation (LORAN))
- 7 Local Area Augmentation (e.g. Differential GPS)
- 8 Automatic Identification System (AIS)
- 9 Electronic Chart Display and Information System (ECDIS)
- 10 Integrated Bridge Systems (IBS)
- 11 Portable Pilot Units (PPU)

Meteorological and hydrological external forces on ships should include:

- 1 Wind on safety of the waterway and ship
- 2 Manoeuvrability
- 3 Reduced visibility of the waterway
- 4 High and low water pressures on height and depth

External Links

The important contribution of Vessel Traffic Services towards maintaining the safety of life at sea, safety and efficiency of navigation and the protection of the marine environment is recognised nationally and internationally. International Association of Marine Aids to Navigation & Lighthouse Authorities (IALA) guidelines on recruitment, qualification and training for Vessel Traffic Services Operators have been adopted and are regulated in the UK through The Maritime and Coastguard Agency. These Vessel Traffic Services National Occupational Standards take cognisance of and complement the IALA guideline and model courses

PSSVTS104

Apply nautical knowledge to Vessel Traffic Services operations

Developed by Port Skills and Safety

Version number 2

Date approved January 2013

Indicative review date January 2016

Validity Current

Status Original

Originating organisation Skills for Logistics

Original URN PSSVTS104

Relevant occupations Vessel Traffic Service Operators; Vessel Traffic Service Supervisor; Vessel Traffic Service Manager; Harbour Masters; Marine Pilots; Ship's Master; Bridge Team

Suite Vessel Traffic Services Operations

Key words Vessel Traffic Services; harbour; marine; port; safety of navigation;