

VHF RADIO ONLINE SYLLABUS

A. THE GENERAL PRINCIPLES AND BASIC FEATURES OF THE MARITIME MOBILE SERVICE RELEVANT TO VESSELS NOT SUBJECT TO A COMPULSORY FIT UNDER THE SOLAS CONVENTION.

A1. Types of communication in the maritime mobile service:

- Distress, urgency and safety communication
- Public correspondence
- Port Operations
- Ship Movement service
- Intership communication
- On-board communications

A2. Types of station in the maritime mobile service:

- Ship stations
- Coast stations
- Pilot stations, port stations etc
- Aircraft stations
- Rescue coordination centre (RCC)

A3. Elementary knowledge of radio frequencies and channels appropriate to the VHF maritime mobile band:

- The concept of frequency
- Propagation on VHF frequencies
- Range of voice communication
- Range of DSC transmissions
- Frequencies and channels allocated to the maritime mobile service
- The usage of VHF frequencies in the maritime mobile service
- The concept of radio channel: simplex, semi-duplex and duplex
- Channel plan for VHF including allocations for the GMDSS
- Distress, urgency and safety channels
- National channels for small craft safety
- Intership communications
- Port operations and ship movement channels
- Calling channels
- Public correspondence channels

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A4. Functionality of ship station equipment:

- Sources of energy of ship stations
- Different kinds of batteries and their characteristics
- Charging Batteries
- Maintenance of batteries

B. DETAILED WORKING KNOWLEDGE OF RADIO EQUIPMENT.

B1. VHF Radio equipment:

1.1 Radiotelephone channels

- Channel selection and controls
- Dual watch facilities and controls

1.2 Basic controls and usage, e.g.

- Connecting the power
- Press to transmit switch
- Squelch control
- Using the volume control
- High/low power output switch
- Using the dimmer control
- Dual watch function

1.3 Portable two-way VHF radiotelephone apparatus

1.4 Maritime VHF antennas

B2. Purpose and use of Digital Selective Calling (DSC) facilities:

2.1 The general principals and basic features of DSC

- DSC messages
- DSC attempt
- Call acknowledgement
- Call relay

2.2 Types of call

- Distress call
- All ships call
- Call to an individual station
- Geographical area call
- Group call

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2.3 The Maritime mobile Service Identity (MMSI) number system

- Nationality identification: maritime Identification Digits (MID)
- Ship station numbers
- Coast station numbers

2.4 Call categorisation and priority

- Distress
- Urgency
- Safety
- Ship's business
- Routine

2.5 Call telecommand and traffic information

- Distress alerts
- Other calls
- Working channel information

2.6 VHF DSC facilities and usage

- Channel 70 instant alert selector
- DSC data entry and display
- Updating vessel position
- Entering pre-set message
- Entering traffic information
- Reviving received messages
- DSC watch keeping functions and controls

C. OPERATIONAL PROCEDURES AND DETAILED PRACTICAL OPERATION OF GMDSS SUBSYSTEMS AND EQUIPMENT.

C1. Search and Rescue (SAR) Procedures in the GMDSS:

1.1 Sea areas and access to GMDSS facilities

1.2 The Role of RCCs

1.3 Organisation of search and rescue

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C2 Distress, urgency and safety communication procedures in the GMDSS:

2.1 Distress communications via VHF DSC equipment

- DSC distress alert
- The definition of a distress alert
- The transmission of a distress alert
- Transmission of a shore to ship distress alert relay
- Transmission of a distress alert by a station not itself in distress
- Receipt and acknowledgement of VHF DSC distress alert
- Acknowledgement procedure
- Receipt and acknowledgement by a coast station
- Handling of distress alert
- Preparations for handling of distress traffic
- Distress traffic terminology
- On-scene communications
- SAR operation

2.2 Urgency and safety communications via DSC equipment

- The meaning of urgency and safety communications
- Procedure for DSC Urgency and safety calls
- Urgency communications
- Safety communications

C3 Protection of distress frequencies:

3.1 Avoiding harmful interference

- Avoidance of the transmission of false alerts
- The status of VHF Channel 70

3.2 Transmissions during distress traffic

3.3 Prevention of unauthorised transmissions

3.4 Test protocols and procedures

- Testing DSC procedures
- Radiotelephone test procedures

3.5 Avoidance of transmissions in the VHF guard bands

3.6 Procedures to follow when a false alert has been transmitted

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C4 Maritime safety information:

4.1 The Navtex system

- Purpose and capabilities, including distress and safety functions

C5 Alerting and locating Signals:

5.1 Purpose and definition

5.2 Emergency Position Indicating Radio Beacons (EPIRBs)

- Registration and coding
- Information contents of a distress alert
- False alerts
- Operation, including automatic and manual activation
- COSPAS/SARSAT 406MHz EPIRB
- Inmarsat-E 1.6 GHz EPIRB
- 121.5 EPIRB
- VHF DSC EPIRB
- 121.5 homing function
- Mounting considerations
- Routine maintenance
- Testing
- Checking battery expiry date
- Checking the float-free mechanism expiry date

5.3 Search and Rescue Transponder (SART)

- Operation
- Operating height
- Effect of radar reflector
- Range of a SART transmitter
- The SART transmission on a radar display
- Routine maintenance of a SART
- Testing a SART
- Checking the battery expiry date

D. OPERATIONAL PROCEDURES AND REGULATIONS FOR VHF RADIOTELEPHONE COMMUNICATIONS.

D1. Ability to exchange communications relevant to the safety of life at sea using the English language:

1.1 Distress communication

- Distress signal
- The correct use and meaning of the signal MAYDAY
- Distress call
- Distress message
- Acknowledgement of a distress message
- Obligation to acknowledge a distress message
- Correct form of acknowledgement
- Action to be taken following acknowledgement
- The control of distress traffic
- The correct use and meanings of the signals
- SEELONCE MAYDAY
- SEELONCE DISTRESS
- PRUDONCE
- SEELONCE FEENEE
- Transmission of a distress message by a station not itself in distress
- The meaning and correct use of the signal MAYDAY RELAY

1.2 Urgency communications

- Urgency signal
- The meaning and correct use of the signal PAN-PAN
- Urgency message
- Obtaining urgent medical advice through a Coast Radio Station

1.3 Safety communications

- Safety signal
- The meaning and correct use of the signal SECURITE
- Safety Message
- Special procedures for communications with appropriate national organisations on matters affecting safety

1.4 Maritime Safety Information

- Reception of MSI by VHF Radiotelephony

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1.5 Awareness of the existence and use of the International Maritime Organization (IMO) Standard Marine Navigational Vocabulary

- Knowledge of the following basic signals:
ALL AFTER, ALL BEFORE, CORRECT, CORRECTION, IN FIGURES, IN LETTERS, I SAY AGAIN, I SPELL OUT, OVER, RADIO CHECK, READ BACK, RECEIVED, SAY AGAIN, STATION CALLING, TEXT, TRAFFIC, THIS IS, WAIT, WORD AFTER, WORD BEFORE, WRONG

1.6 Use of international phonetic alphabet for letters and phonetic pronunciation of numerals

D2. Regulations, obligatory procedures and practices:

2.1 Awareness of international documentation and availability of national publications

2.2 Knowledge of the international regulations and agreements governing the maritime mobile service

- Requirement for Ship Radio Licence
- Regulations concerning control of the operation of radio equipment by the holder of an appropriate certificate of competence
- National regulations concerning the keeping of radio records
- Preservation of the secrecy of correspondence
- Types of call and types of message which are prohibited

D3. Practical and theoretical knowledge of radiotelephone procedures:

3.1 Public correspondence and radiotelephone call procedures

- Method of calling a coast station by radiotelephony
- Ordering for a manually switched link call
- Ending the call
- Calls to ships from Coast Radio Stations
- Special facilities of calls
- Selecting an automatic radiotelephone call

3.2 Traffic charges:

- International charging system
- Accounting Authority Identification Code (AAIC)

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3.3 Practical traffic routines

- Correct use of callsigns
- Procedure for establishing communication on
- Intership channels
- Public correspondence channels
- Small craft safety channels
- Port operation and ship movement channels
- Procedure for unanswered calls
- Procedure for garbled calls
- Control of communications

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