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GMDSS Essentials: Distress and Safety Communications

23 – 27 November 2026
Lyon (France)

UK Traininig
PARTNER



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GMDSS Essentials: Distress and Safety Communications

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GMDSS essentials covers the core of the Global Maritime Distress and Safety System: the radio and satellite links, sea areas and message priorities that let a vessel raise a distress, urgency or safety call and receive warnings at sea. This 1-week course gives deck officers, ship's crew and shore-based staff a compact overview, and its final deliverable is a watch-and-alert card with a radio log and test checklist for one vessel.

Introduction

The course rests on three references. SOLAS, the International Convention for the Safety of Life at Sea, sets which radio installations a ship must carry in each sea area. STCW, the convention on standards of training, certification and watchkeeping for seafarers, defines what radio operators must be competent to do. Digital Selective Calling DSC is the automated calling method at the heart of GMDSS alerting. The level is introductory to practitioner, and no radio background is needed. Teaching uses scripted call drills, message-handling exercises and walkthroughs of console layouts.

Course Objectives

- Define the four GMDSS sea areas and select the radio installations a vessel needs for its trading pattern
- Distinguish distress, urgency and safety priorities and apply the right DSC category and voice prefix to each
- Compare terrestrial VHF, MF and HF links with Inmarsat and Cospas-Sarsat satellite alerting in coverage and use
- Interpret NAVTEX and SafetyNET broadcasts and decide which warnings the bridge must act on
- Apply alert relay, acknowledgement and false-alert cancellation steps when working with a rescue coordination centre
- Justify a daily, weekly and monthly test routine for EPIRB, SART and reserve battery arrangements

Target Audience

- Deck officers keeping bridge watches, who must decide which call priority and channel a developing situation needs
- Radio watchkeepers and bridge ratings, who must judge when a received alert is to be acknowledged, relayed or left to shore
- Marine engineers and electro-technical officers, who must select the test and upkeep routine that keeps radio units ready
- Coastguard, port and offshore control staff, who must determine how to coordinate with vessels during search and rescue
- Marine superintendents and fleet staff, who must check whether a vessel's radio log and installations match its sea area



Course Outline

Day 1: GMDSS Purpose, Rules and Sea Areas

- GMDSS Architecture vs Morse-Era Watchkeeping: Automated Alerting Compared with Manual Listening
- IMO, SOLAS and STCW: Who Sets Carriage Rules and Operator Competence
- Sea Areas A1 to A4: Coverage Limits and the Radio Carriage Each Requires
- Shore Infrastructure and Rescue Coordination Centres: Coast Stations, Earth Stations and RCCs
- Radio Operator Duties: Ship-to-Ship and Ship-to-Shore Responsibilities on Watch

Day 2: Radio Bands, DSC and Satellite Alerting

- VHF vs MF vs HF: Range, Propagation and Typical Use at Sea
- Frequencies and Channels: VHF Channels 16 and 70 and Their Purposes
- DSC Call Categories: Distress, Urgency, Safety and Routine Message Formats
- DSC Alert Handling: Transmission, Relay, Acknowledgement and Cancellation of False Alerts
- Inmarsat, EPIRB and Cospas-Sarsat: Satellite Alerting, Beacon Registration and Coverage

Day 3: Warnings, Search and Rescue Messaging and Locating Devices

- NAVTEX vs SafetyNET: Coastal Broadcast Compared with Satellite Enhanced Group Call
- Maritime Safety Information: Weather Forecasts, Navigational Warnings and Message Selection
- Search and Rescue Messaging: On-Scene Exchanges and Coordination with RCCs
- SART vs AIS-SART: Radar Transponder Compared with AIS-Based Survivor Locator
- Incident Radio Handling: Message Sequence During Collision, Fire or Abandonment

Day 4: Radio Upkeep, Power and Records

- Daily vs Weekly vs Monthly Tests: Console, DSC and Beacon Checks by Interval
- Console Configuration Checks: Position Input, MMSI Programming and Alarm Settings
- Power Supply and Reserve Batteries: Emergency Source Arrangements and Load Checks
- Preventive Maintenance and Fault Finding: Inspection Routines and Common Radio Faults
- GMDSS Radio Logbook: Mandatory Entries, Reporting Requirements and Record Keeping

Day 5: Integrated Alert Drill Practice

- GOC vs ROC: Operator Certificate Scopes for Full and Restricted Sea Areas
- Combined Terrestrial and Satellite Drill: Applying Bands, DSC and Inmarsat Together
- Emergency Radio Management Exercise: Applying SAR Messaging and Warning Handling
- Compliance Review Against SOLAS and STCW: Checking a Vessel's Radio Readiness
- Watch-and-Alert Card and Knowledge Review: Completing the Vessel Card and Log Checklist



Skills You Will Gain

- Sea Area Planning
- DSC Alert Handling
- Voice Prefix Use
- MSI Receiver Management
- Beacon Registration and Testing
- Radio Logbook Keeping
- RCC Liaison

Why Attend This Course

- From guessing which channel or priority to use to placing distress, urgency and safety calls in the correct DSC category
- From skimming printed warnings to filtering NAVTEX and SafetyNET messages for those that affect the passage
- From irregular beacon and battery checks to a test routine set by interval with recorded results
- From scattered radio instructions to a watch-and-alert card, radio log and test checklist prepared for one vessel

Conclusion

GMDSS is the arrangement of shore stations, satellites and shipboard radios that makes sure an alert from any vessel reaches rescue services and that warnings reach every ship. The course clarifies three distinctions: distress against urgency and safety priorities, terrestrial against satellite alerting, and NAVTEX against SafetyNET. As a 1-week overview it suits deck officers, engineers and shore controllers who need working knowledge of the essentials rather than the extended practice of a longer GMDSS course.

Course FAQs

What does GMDSS essentials cover?

GMDSS essentials covers the parts of the Global Maritime Distress and Safety System that crew and shore controllers use most: sea areas, DSC alerting, satellite beacons, NAVTEX and SafetyNET warnings, and the priorities for distress, urgency and safety calls.

What is the difference between a distress call and an urgency call in GMDSS?

A distress call, opened with Mayday, reports grave and imminent danger needing immediate help. An urgency call, opened with Pan-Pan, reports a serious situation, such as a medical case or a disabled engine, where life is not in immediate danger.



Which rules does the GMDSS essentials course follow?

The course follows the radio carriage requirements of SOLAS and the operator competence set out in STCW, both adopted under the IMO, and uses DSC as the core alerting method in every drill.

Is the GMDSS essentials course right for a marine engineer?

Yes, for marine engineers and electro-technical officers who look after radio installations. The test routines, battery arrangements, fault finding and logbook topics match their duties, and the alerting topics explain what the units must be ready to do.

What do delegates produce in the GMDSS essentials course?

Delegates produce a watch-and-alert card for one vessel, listing its sea areas, channels and alert steps, together with a radio log template and a test checklist set out by daily, weekly and monthly interval.

