



## PRE-COURSE READING

### INTRODUCTION

Your radio course will include instruction on equipment introduced for the Global Distress and Safety System. GMDSS effectively means that commercial shipping has updated its communications from a skilled labour intensive system to one based on technology. Even if you are not required by law to fit GMDSS equipment, you will find communications increasingly difficult without some aspects of it

Digital Selective Calling is one such equipment. These pre-course notes are intended to give you an understanding of DSC, and the frequencies associated with it.

You will need to know the most important DSC frequencies for the examination, so please do a little work learning them prior to the course.

Prior to the introduction of GMDSS, Distress safety cover, required shipping and shore stations to maintain a loudspeaker listening watch on a Distress & Calling frequency e.g. VHF Channel 16 or 2182 kHz. Because these frequencies are used for two purposes i.e. routine calling and Distress, in areas of high radio traffic there is a possibility that a distress call may go unnoticed amongst the routine calls and chatter.

Since 1999, GMDSS equipped vessels are no longer required to manually listen to a distress frequency. The distress watch is maintained by an automatic device called Digital Selective Calling (DSC). (Channel 16 watch is still required until further notice).

DSC listens on new data alert frequencies, and can be considered a paging device that will alert stations to Distress, Urgency and Safety traffic in addition to calls from an individual station. DSC equipment not only alarms, to alert stations of important traffic but sends and receives short pre-formatted messages.

The information contained in a DSC Distress Alert is:

The Vessel's Identity / Position / Nature of Distress (if time permits or Undesignated)

Although this DSC Alert contains very useful information, it is only the first step in the communication procedure and can be considered the "Wake-up" call to all stations. The ship in distress (if time permits) will now go to the associated voice frequency and broadcast a Distress in the normal manner. Stations alerted by DSC will likewise go the associated voice frequency and receive and acknowledge the distress using normal voice procedure.

## Distress Procedure using DSC (Sea Area 1 & 2)

- Vessel in Distress sends DSC Distress Alert.
- A coast station in range will acknowledge the alert by DSC. *(This will stop further DSC alert calls)*
- Ships receiving the DSC alert will go to the associated voice frequency
- Distress vessels sends normal voice Mayday message on associated voice frequency.
- All stations receiving voice Distress will acknowledge by voice using normal Distress procedure.

DSC being a digital system it does not transmit the ship's identity as a Name or Callsign but all Ship and shore stations are given a unique 9 digit Maritime Mobile Service Identity Numbers (MMSI). Stations can call other stations by programming into their DSC encoder the required stations MMSI.

Ship Station MMSI	<b>232123456</b>	First 3 numbers indicate Nationality of station
Coast Station MMSI	<b>002321234</b>	Coast Stations MMSI start with 00 then nationality.
Group Station MMSI	<b>023212345</b>	Group MMSI starts with a 0

To find the Name of a Station from the MMSI refer to ITU List of Callsigns and Numerical Identities.  
IMPORTANT DSC FACTS to Know

**Position Update** DSC requires an accurate position to be inputted. By GPS or manually every 4 hours.

**DSC Equipment checks** Daily - Self Test (no -transmission)  
Weekly - Live Test Call to suitable coast radio station if within range.  
(usually conducted on 2187.5 kHz). **NOTE : NO TEST CALLS ON VHF CH 70**

**Routine Calls** With the exception of VHF CH 70, Non urgent calls to individual stations cannot be made on the Distress/Safety alert frequencies.  
On MF ship-ship DSC alert made on **2177 kHz** Coast Stn - Ship on 2177kHz

### IMPORTANT DSC Frequencies (learn frequencies and usage in bold type)

<u>DSC Alert Freq</u>	<u>Use</u>	<u>Associated Voice Freq</u>
<b>VHF 70</b>	<b>Distress/Urgency/Safety, &amp; Routine alerts</b>	<b>VHF 16</b>
<b>2187.5 kHz</b>	<b>Distress/Urgency/Safety Alerts only</b>	<b>2182 kHz</b>
<b>2177 kHz</b>	<b>Ship-Ship Routine DSC Calling</b>	
4207.5 kHz	Distress/Urgency/Safety Alerts only	4125 kHz
6312 kHz	Distress/Urgency/Safety Alerts only	6215 kHz
<b>84145 kHz</b>	<b>Distress/Urgency/Safety Alerts only</b>	<b>8291 kHz</b>
12577 kHz	Distress/Urgency/Safety Alerts only	12290 kHz
16804.5 kHz	Distress/Urgency/Safety Alerts only	16420 kHz

### Important Distress and Safety Frequencies (to know)

**518 kHz** Navtex (Maritime Safety information by radio telex) - range 200-300 Miles

**406 MHz** COSPAS/SARSAT EPIRB ( Emergency Position Indicating Radio Beacon)  
EPIRB Homing frequency 121.5MHz

**9 GHz or 3cm - SART Search and Rescue Radar Transponder**

**VHF Channel 13 - Intership Safety of Navigation Channel**

**VHF Channel 06 - Primary Inter ship Channel**