



**The  
SafetyNET  
Users  
Handbook**

**Fourth Edition**

# SafetyNET Users Handbook

4<sup>th</sup> Edition (PDF)

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## **Preface**

This handbook is intended for mariners, to explain the operation of the International SafetyNET service as an element of the Global Distress and Safety System (GMDSS).

The handbook also explains how the mariner can use the SafetyNET service to obtain vital Maritime Safety Information (MSI) tailored to the needs of his own vessel.

The SafetyNET service is part of the Enhanced Group Call (EGC) capability, which is a function of the Inmarsat C system.

You can obtain more information about SafetyNET and the GMDSS by contacting one of the addresses given in appendix A, or using the Internet to view the information at [www.inmarsat.com/safety](http://www.inmarsat.com/safety).

## **Introduction**

Recent developments in communications technology, in particular satellite communications, have made possible new concepts of distress and safety services for ships travelling the oceans. In 1988, contracting governments to the Safety of Life at Sea (SOLAS) convention, working with the International Maritime Organisation (IMO), incorporated these developments into the Global Maritime Distress and Safety System (GMDSS).

Among other things, the GMDSS defines the means by which shore-based authorities broadcast distress, urgency and safety information to ships. As explained in later sections, the GMDSS relies on two forms of communications technology to broadcast Maritime Safety Information (MSI) – NAVTEX, MF terrestrial radio to cover many coastal areas, and satellite communications, to cover entire Inmarsat Ocean Regions.

The GMDSS became mandatory for all vessels over 300 grt on international voyages and all passenger vessels on the 1<sup>st</sup> of February 1999.

This handbook deals mainly with the distribution of MSI via satellite using the International SafetyNET service.

## What is MSI?

Maritime Safety Information, MSI, is defined in general terms as;

“navigational and meteorological warnings, meteorological forecasts, and other urgent safety-related messages” of vital importance to all ships at sea.

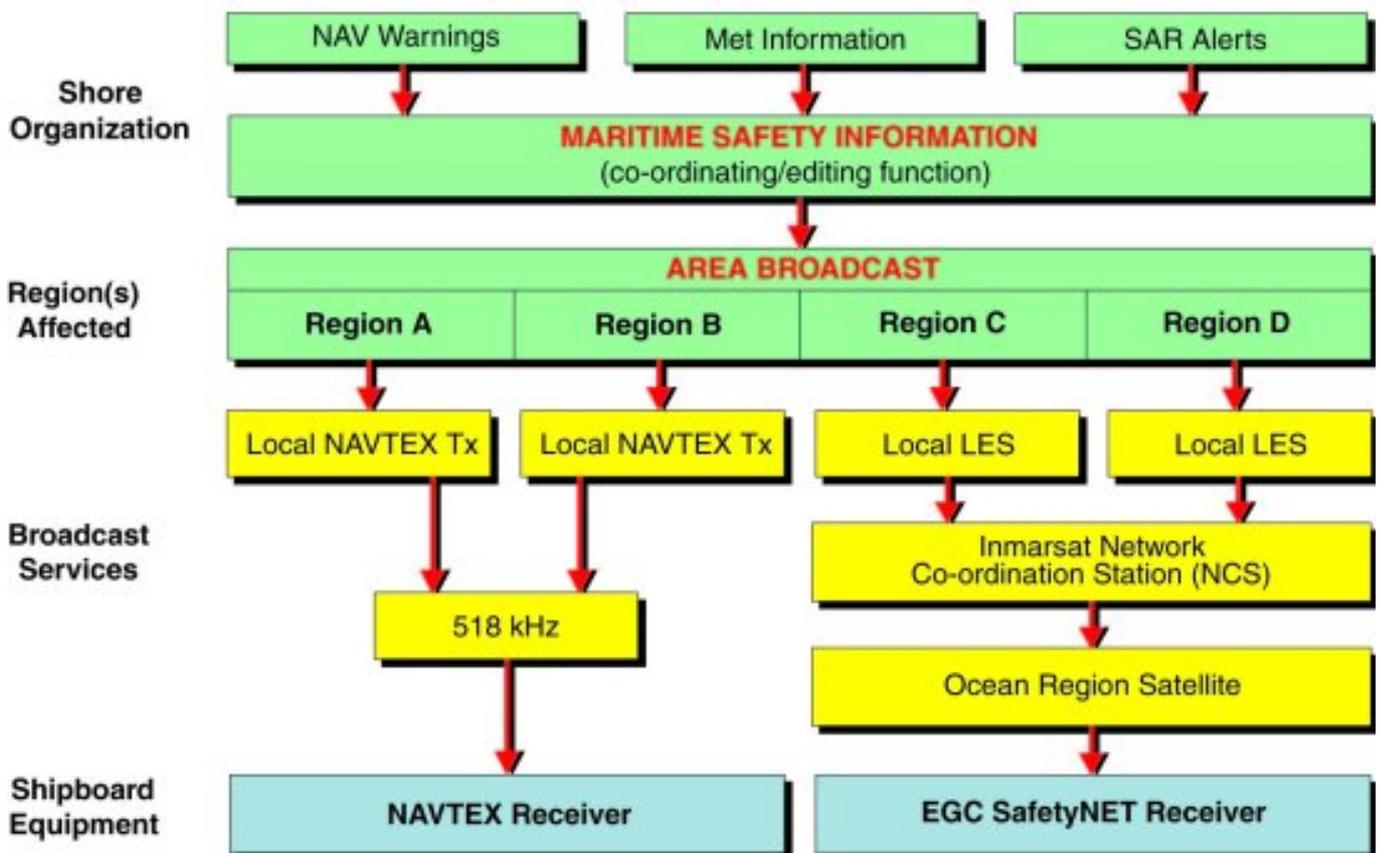
The MSI service, illustrated in Figure 1, is an internationally co-ordinated network of broadcasts of Maritime Safety Information from different Information Providers, such as:

- National Hydrographic Offices, for navigational warnings and electronic chart correction data;
- National Meteorological Offices, for weather warnings and forecasts;
- Rescue Co-ordination Centres (RCCs), for shore-to-ship distress alerts and other urgent information; and
- The International Ice Patrol, for North Atlantic ice hazards.

Only Information Providers approved by the IMO, the IHO (International hydrographic Organisation), or the WMO (World Meteorological Organisation) are given authorisation to make SafetyNET broadcasts.

Please note the following points about the SafetyNET service:

*Inmarsat Ltd. is not an Information Provider, but provides the satellite communications system used for broadcasting MSI. Reception of MSI broadcasts is free of charge to all ships.*



**Figure 1 – Provision of Maritime Safety Information (MSI)**

## **Two independent systems for broadcasting MSI**

The International NAVTEX Service, whereby the Information Provider forwards the MSI for a given area to a 518 kHz MF NAVTEX transmitter; note that reception of NAVTEX MSI is limited by the range of the MF transmitter to the coastal area immediately around the transmitter;

The International SafetyNET Service, whereby the Information Provider forwards the MSI for a given area to an Inmarsat C Land Earth Station (LES), for broadcasting via the satellite network over an entire Inmarsat Ocean Region; consequently, ships can receive SafetyNET MSI anywhere in that Ocean Region, irrespective of their distance from the LES/Information Provider.

As indicated in Figure 1, MSI for a given area is generally broadcast over either NAVTEX or SafetyNET (except for some circumstances where a message may be broadcast using both services); ships equipped with both a NAVTEX receiver and SafetyNET receiver should use the appropriate receiver to receive MSI for a particular area. Where a coastal area is not covered by the International NAVTEX service, for example around Australia, MSI for that area is broadcast on SafetyNET only.

To find out which MSI service, NAVTEX or SafetyNET, serves a particular area, a user should refer to the current Lists of Radio Signals publication for that area, obtainable from national administrations.

## **Scheduled and unscheduled MSI broadcasts**

To ensure that the user knows when to receive MSI for a given area and subject, many MSI broadcasts are scheduled, under IMO co-ordination, to a particular time and satellite. For example, all navigational warnings and meteorological forecasts are scheduled broadcasts, while meteorological warnings and distress alerts are unscheduled broadcasts and may be given urgency or distress priority, which produces an alarm at the terminal.

Information on scheduled broadcasts for both NAVTEX or SafetyNET, is given in current Lists of Radio Signals, available from national administrations.

To be sure of receiving a scheduled MSI broadcast, the receiver MUST be tuned to the appropriate satellite/Ocean Region at the specified time. You do this by "Logging-in" to the appropriate ocean region satellite.

A smaller number of MSI messages are transmitted as unscheduled broadcasts, for example urgent navigational warnings, severe weather warnings, and distress alert relays. Unscheduled SafetyNET broadcasts are made over all satellites covering an area, so the receiver will not miss the message, no matter what satellite it is logged-in to. The user is advised of the receipt of an unscheduled distress or urgency broadcast by the terminal giving an alarm.

## **Language used for MSI broadcasts**

All MSI broadcasts made on the International MSI service are printed in the English language (sometimes a local language is added after the English wording).

## **The 16 NAVAREAs/METAREAs**

Figure 2 shows the 16 Navigational/Meteorological Areas (NAVAREAs/METAREAs), into which the earth's navigable waters are sub-divided for the purpose of MSI broadcasts. For each area, a NAVAREA or METAREA Co-ordinator co-ordinates the broadcasting of navigational warnings and a the meteorological information throughout their area respectively.

## The Inmarsat Ocean Regions

Figure 2 also shows the coverage area of the four Inmarsat satellites, corresponding to the four Ocean Regions:

- Atlantic Ocean Region-East (AOR-E)
- Indian Ocean Region (IOR)
- Pacific Ocean Region (POR)
- Atlantic Ocean Region-West (AOR-W)

The four Ocean Regions represent the areas within which an EGC receiver can receive SafetyNET MSI broadcasts - as shown in Figure 2, the Ocean Regions cover practically all of the earth's navigable waters, except for the polar regions, beyond about 76 degrees N and 76 degrees S.

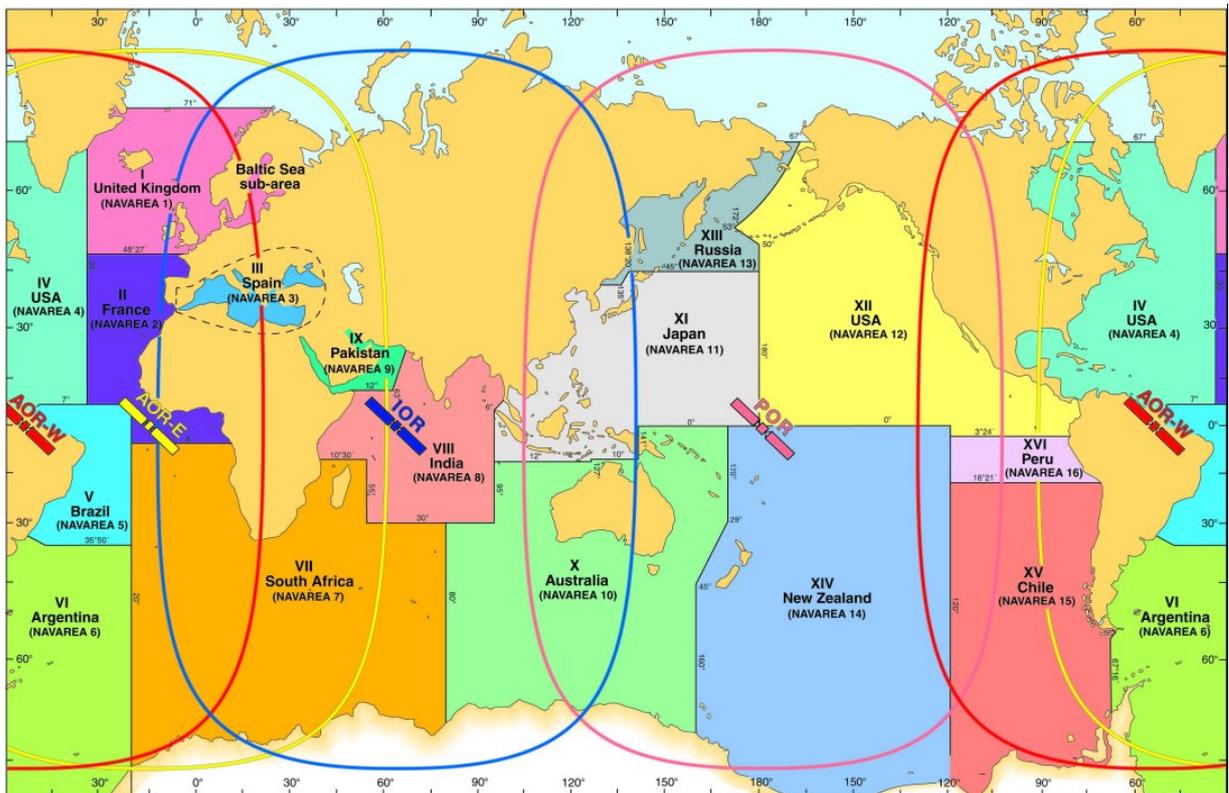


Figure 2 – 16 NAVAREAs/METAREAs showing Inmarsat Ocean Regions

## The Inmarsat Enhanced Group Call (EGC) Services

The Inmarsat C satellite communications system has a capability known as Enhanced Group Call (EGC), which enables Information Providers to send messages for selective reception by EGC receivers located anywhere in the four Ocean Regions.

The Information Provider determines which receivers are to receive the message by including identifying information, such as the NAVAREA/METAREA/geographical area for which the MSI is intended, along with the message; individual EGC receivers can be programmed to use this information to select only the required messages, and to reject all others. Based on this selective capability, the EGC system supports two services:

The EGC SafetyNET service, which allows the EGC receiver operator to program the receiver with the geographical areas for which MSI will be received, and the categories of MSI messages required.

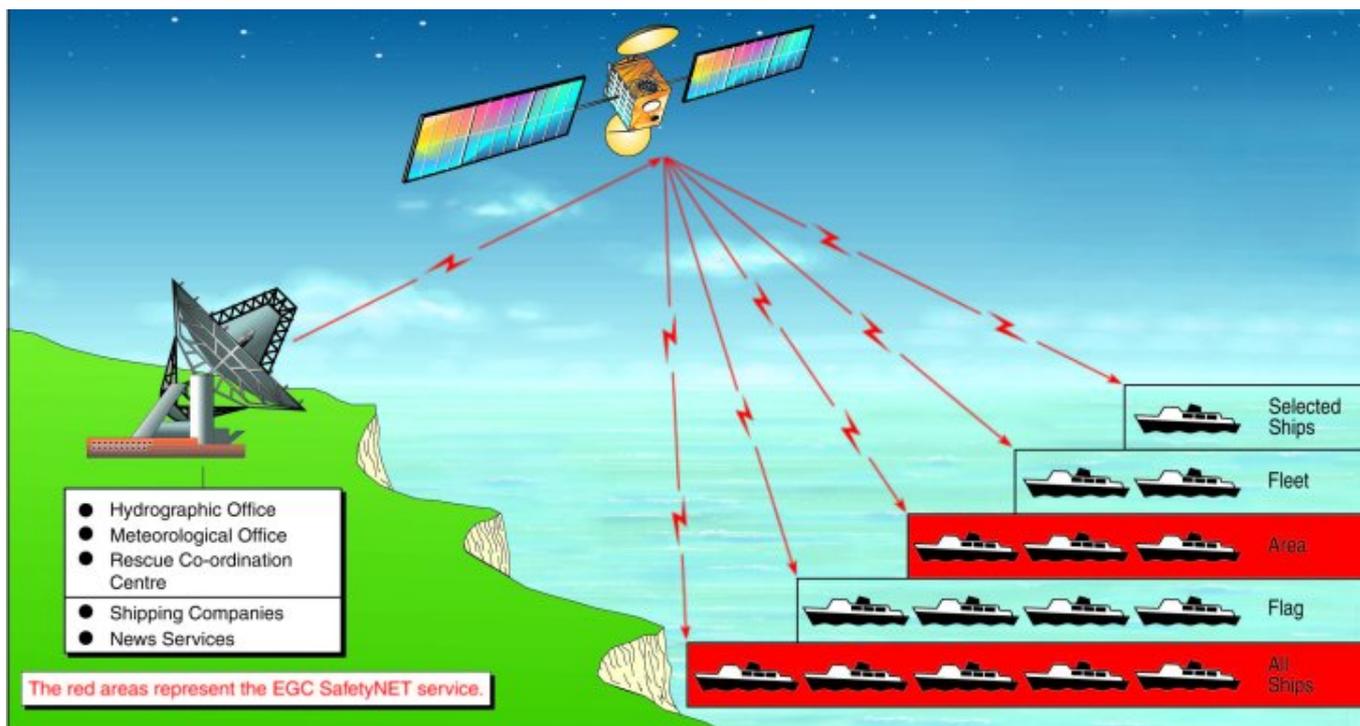
In Figure 3, the shaded parts represent the EGC SafetyNET service.

The EGC FleetNET service, a commercial service, where individual EGC receivers are programmed to store an EGC identification (ENID) code, which is used to select only messages

intended for ships belonging to a group, such as a fleet or national flag, or subscribers to an information service.

In Figure 3, the non-shaded parts represent the EGC FleetNET service.

This handbook considers only the EGC SafetyNET service.



**Figure 3 – Inmarsat Enhanced Group Call (EGC) Services**

### **Operation of the SafetyNET Service - An Overview**

Operation of the SafetyNET service, illustrated in Figure 4, involves a sequence of events:

- A registered Information Provider, such as a national Hydrographic Office, Rescue Co-ordination Centre (RCC), or Meteorological Office, receives information from its specialised sources.
- Each Information Provider prepares an MSI message in a standardised format, and submits it to the appropriate co-ordinator (Navigational Warning Co-ordinator, SAR Co-ordinator, or Meteorological Issuing Service).
- The co-ordinator checks the message with any other information received, and edits it accordingly, then submits the finalised text to a selected Inmarsat C LES. Included with the message are the following codes (known as the "C" codes), to instruct the LES and MES on how to process the message automatically:

**Priority Code**, (distress, urgency or safety);

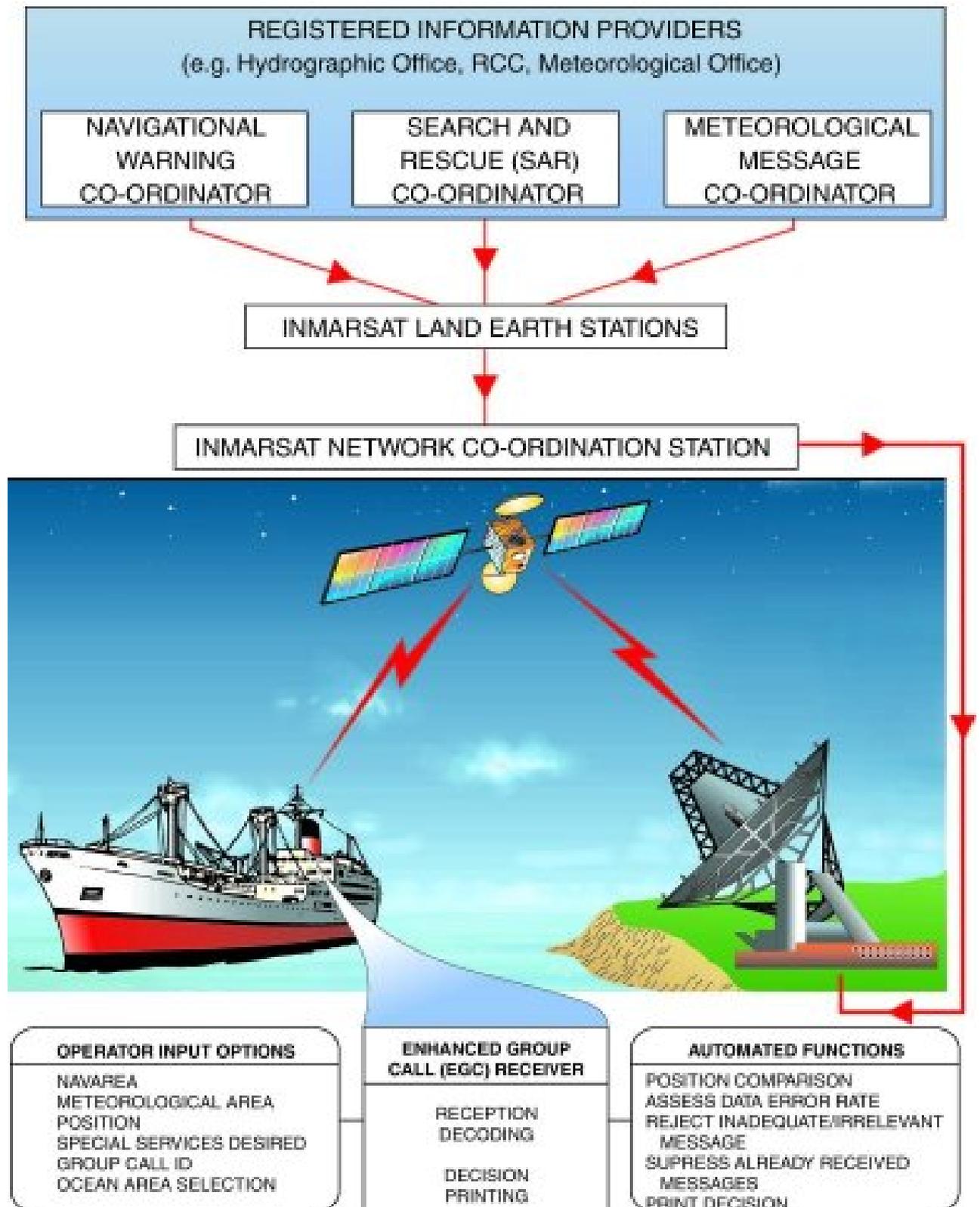
**Service Code**, to identify the message type, for example a shore-to-ship distress alert, or meteorological forecast;

**Address Code**, to identify the geographical area for which the MSI is applicable – this may be a fixed geographical area, such as one of the 16 NAVAREAs/METAREAs shown in Figure 2, or a temporary area determined by the originator, such as a circular or rectangular area, as shown in Figure 5 and Figure 6;

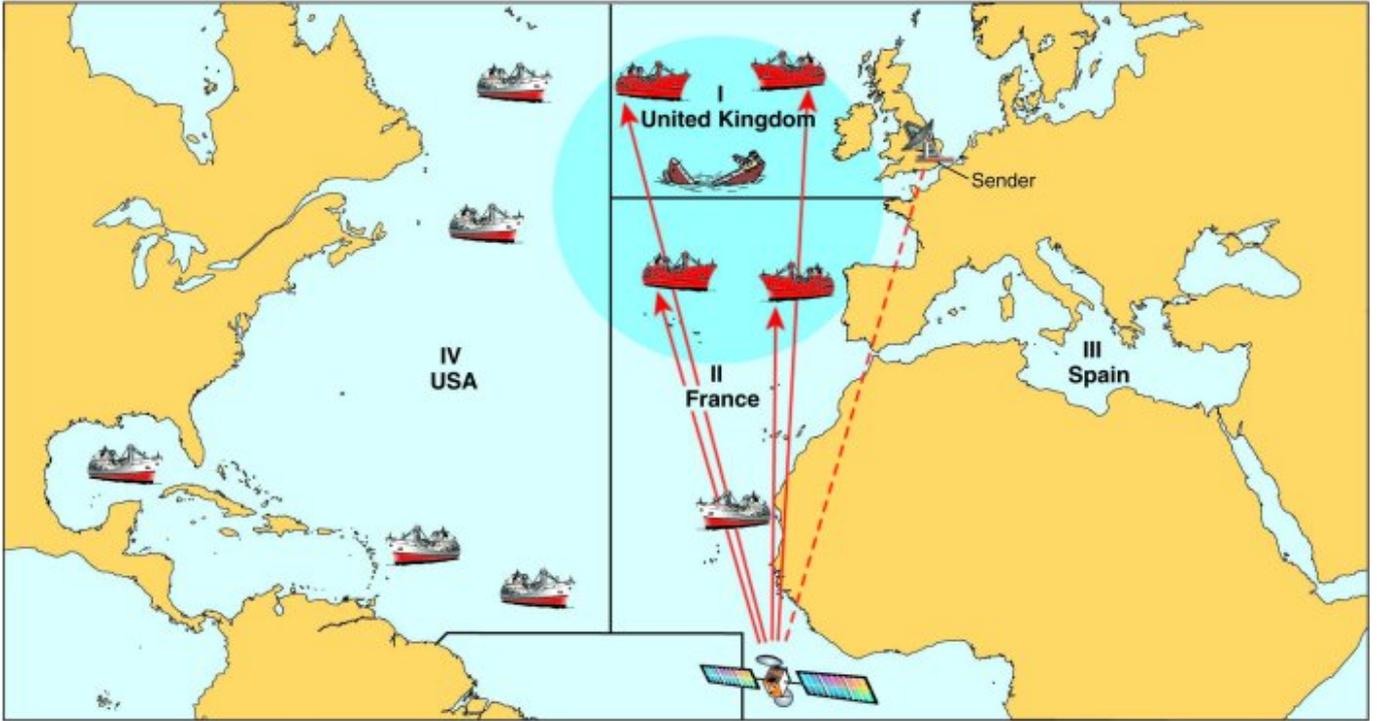
**Repetition Code**, to indicate the number of times the message should be broadcast

**Presentation Code**, to indicate the character set in which the message will be transmitted. (The character set used is always the International Alphabet Number 5, which is also known as 7-bit ASCII.)

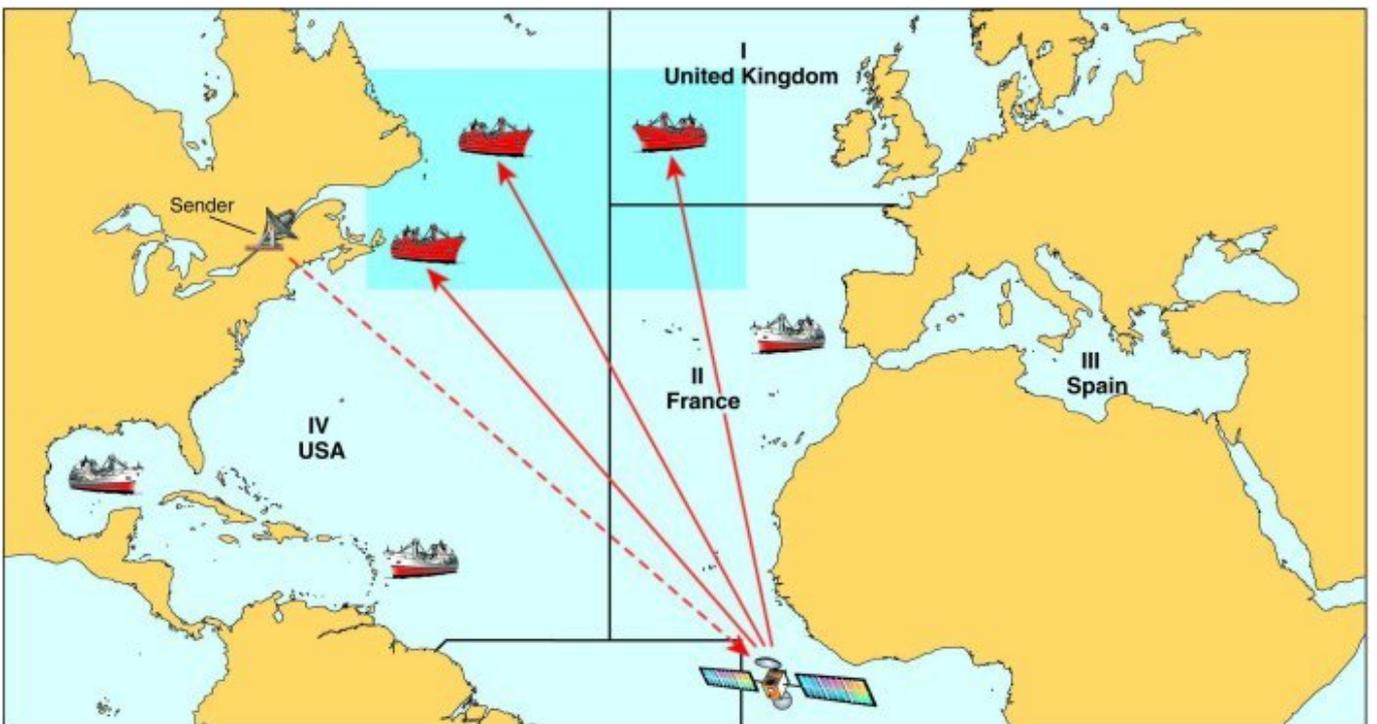
- The Information Provider may also choose the scheduled time(s) at which the message is to be broadcast, and, if a LES operates in more than one Ocean Region, the satellite to be used.
- The LES receives the message with its instructions, and queues it with any other messages received, according to priority and scheduled time of transmission.
- At the required time for transmission, the LES forwards the message over the Interstation Signalling Link (ISL) to the NCS for the Ocean Region.
- The NCS automatically broadcasts the message on the NCS Common Signalling Channel over the entire Ocean Region.
- EGC receivers, (that meet the requirements specified in Appendix B), must receive the MSI message, and may print it out, unless the operator has chosen to reject any messages of that type, or it has recently been printed out by that terminal. Distress and urgency messages will be printed out irrespective of operator settings.



**Figure 4 – Operation of the SafetyNET Service**



**Figure 5 - SafetyNET message addressed to a circular area**



**Figure 6 – SafetyNET message addresses to a rectangular area**

## What MSI is available?

The following is a list of the different types of MSI you may receive on your receiver, subject to availability, as discussed in the next section.

## MSI broadcast over the SafetyNET service

(see the notes below for more information)

Coastal warnings (see Note 1):

- Navigational warnings;
- Meteorological warnings;
- Ice reports;
- Search and rescue information;
- Meteorological forecasts;
- Pilot service messages;
- LORAN system messages;
- SATNAV (GPS etc.) system messages;
- Other electronic navaid messages;

Meteorological and Navarea warnings and meteorological forecasts to ships within specified NAVAREAs/METAREAs;

Search-and-rescue co-ordination to ships within specified circular or rectangular areas;

Urgency messages, meteorological and navigational warnings to ships within specified circular or rectangular areas;

Shore-to-ship distress alerts to ships within specified circular areas;

## Notes

1: The SafetyNET coastal warning broadcast facility is made available for the transmission of coastal information to areas where NAVTEX MSI is not provided.

2: MSI messages are generally broadcast with a key-word in their header indicating the priority of the message - for example DISTRESS or MAYDAY for Priority 3, URGENT or PAN PAN for Priority 2, and SAFETY or SECURITE for Priority 1.

3: In some areas, SafetyNET MSI broadcasting is limited, while Information Providers are being established - see Table 1, but to find out the current situation, consult corrected Lists of Radio Signals.

## Availability of MSI in different areas

To avoid excessive duplication of broadcasts, the IMO has authorised the following arrangements:

For a given NAVAREA/METAREA which is covered by more than one Ocean Region satellite, scheduled broadcasts of MSI, such as navigational warnings and meteorological information, are made only via a single nominated satellite/Ocean Region.

For a NAVAREA/METAREA which is covered by more than one Ocean Region satellite, unscheduled broadcasts of MSI, such as gale warnings and distress alert relays, are made via all satellites/Ocean Regions which cover the area concerned.

At the time of writing (June 2004) some Information Providers may not yet have made the necessary arrangements to provide MSI through a Co-ordinator to an Inmarsat C Land Earth

Station. This could result in some types of MSI in some NAVAREAS/METAREAS, or in a limited amount of MSI being provided through one satellite/Ocean Region compared to another

Table 1 shows the availability of MSI broadcasts in the different areas and Ocean Regions, as of June 2004. (Note that this information is subject to change; to obtain up-to-date information, you should refer to a current publication of Lists of Radio Signals, available from national administrations.

NAV/MET AREA	NAV Information		MET Information		Satellite
	Co-ordinator	Times (UTC)	Issuing Country	Times (UTC)	
I	United Kingdom	1730 & as appropriate (AOR-E)	United Kingdom	0930, 2130 (AOR-E)	AOR-E AOR-W
II	France	1630 (AOR-E)	France	0900, 2100 (AOR-E) Warnings only (AOR-W)	AOR-E AOR-W
III	Spain	1200, 2400 & on receipt (AOR-E)	Greece <sup>1</sup>	1000, 2200 (AOR-E)	AOR-E
IV	USA	1000, 2200 (0000, 1200, Ice reports N.Atlantic)	USA	0430, 1030, 1630, 2230	AOR-W
V	Brazil	0400, 1230	Brazil	0130, 1330	AOR-E
VI	Argentina	0200, 1400	Argentina	0230, 1730	AOR-W
VII	South Africa	1940 (AOR-E/IOR) 0040, 1240 (IOR) Reunion 0140, 1340 (IOR) Kerguelen Islands 0330, 1530 (IOR) Mayotte	South Africa	0940, 1940 (AOR-E) 0940, 1940 (IOR) <sup>2</sup>	AOR-E IOR <sup>5</sup>
VIII	India	0040, 1240 Reunion 0330, 1530 Mayotte	India Mauritius/ Reunion	0900, 1800 N of 0° 0130, 1330 S of 0° 0000 <sup>3</sup> , 0600 <sup>3</sup> , 1200 <sup>3</sup> , 1800 <sup>3</sup> S of 0°	IOR
IX	Pakistan	0800	Pakistan	0700	IOR
X	Australia	0700, 1900 & on receipt (IOR/POR) 0140, 1340 (POR) New Caledonia	Australia	1030, 2330 (IOR) W, Casey W 1100, 2300 (POR) N, NE, SE, W, Casey E Coastal Warnings for Bass Strait Northern Territory & Western Australia	IOR/POR
XI	Japan	0005, 0805, 1205 (POR/IOR)	China Japan	0330, 1015, 1530, 2215 (IOR) 0230, 0830, 1430, 2030 (POR) N of 0° 0815, 2015 (POR) <sup>4</sup> S of 0°	IOR/POR
XII	USA	1030, 2230	USA	0545, 1145, 1745, 2345	POR/ AOR-W
XIII	Russia	0930, 2130	Russia	0930, 2130	POR
XIV	New Zealand	Every 12h & on receipt (POR) 0140, 1340 (POR) New Caledonia 0030, 1230 (POR) Wallis & Fortuna 0250, 1450 (POR) French Polynesia	New Zealand	0130 LT, 1330 LT (NZ Coast only) 0330, 1530 (Warnings only) 0930, 2130	POR
XV	Chile	0210, 1410, 2210	Chile	1845	AOR-W
XVI	Peru	0519, 1119, 1719, 2319	USA	0515, 1115, 1715, 2315	AOR-W

**Table 1- Status of MSI broadcasts in the International SafetyNET Service**

## Notes

LT = Local Time

- <sup>1</sup> Scheduled bulletins and warnings for Western Mediterranean Sea are prepared by France
- <sup>2</sup> Forecasts for 30°S - 50°E/50°- 80°E and tropical cyclone warnings are prepared by Reunion
- <sup>3</sup> Tropical cyclone warnings if any issued by Reunion as unscheduled broadcast through AOR-E as well
- <sup>4</sup> Scheduled bulletins and warnings for south of the equator prepared by Australia
- <sup>5</sup> Transmission via AOR-E for areas West of 20°E. Transmission via IOR for areas East of 20°E

*Broadcast times for MET information published in the table on the previous page are for routine Weather messages, Storm Warnings are also broadcast on receipt.*

*International Maritime Organisation (IMO) has decided that routing broadcasts of navigational warnings and meteorological forecasts will be made at scheduled times over a single nominated satellite for each NAVAREA/METAREA. Unscheduled broadcasts of severe weather warnings will be made over all satellites which serve the area concerned.*

## Repeat broadcasts of MSI information

Some classes of EGC receivers/MESs may not provide uninterrupted monitoring of the channel used for MSI broadcasts, and may switch to a different channel for normal commercial traffic (for more information, see the ***Inmarsat Maritime Communications Handbook***, available Inmarsat Ltd. at the address given in Appendix A).

To improve the probability of these receivers receiving MSI broadcasts, Information Providers re-broadcast some messages:

Unscheduled messages, such as distress alerts and gale warnings are usually re-broadcast six minutes after the initial broadcast;

Scheduled broadcasts, such as navigational warnings and other longer-term information are repeated at every scheduled time, for as long as they remain in force.

(Repeated broadcasts of the same message may, however, give some users the problem of receiving too many printed messages - for advice, see the section Printing only essential messages.)

## SOLAS requirements for receiving MSI broadcasts

Every SOLAS-compliant ship must meet the following legal requirements for receiving MSI broadcasts:

- Watch-keeping - every ship, while at sea, shall maintain a radio watch for broadcasts of Maritime Safety Information on the appropriate frequency or frequencies on which such information is broadcast for the area in which the ship is navigating.
- Logging messages - on a SOLAS-compliant ship, a written record shall be kept in the radio log of the time and identity of all safety messages received. A printed copy shall be kept of the text of all distress traffic.

In addition to these mandatory requirements, IMO recommends that all current navigational and meteorological messages be retained on the bridge, for as long as they are applicable, for the use of the person in charge of the navigational watch.

## Typical MSI broadcasts

Figure 7 and Figure 8 show typical MSI broadcasts which you may receive on your terminal.

Note the following:

The date and time of the message in UTC;

The identifier of the LES sending the message – in Figure 7, STRATOS CSAT represents the Stratos Inmarsat C LES;

In Figure 8, LES 121 represents the Aussaguel Inmarsat C LES;

In figure 9, LES 302 represents the Stratos IOR Inmarsat C LES;

A unique number identifying the message – in Figure 7, this is 929960 and in Figure 8, this is 2498; The priority of the message – Safety in Figure 7, Urgency in Figure 8. (The terminal responds automatically to an urgency message by giving an audible/visual alarm).

The type of message - Figure 7 is a navigational warning to NAVAREA I; Figure 8 is a meteorological warning/forecast to METAREA II.

Note also the term NoPos in Figure 8 - some terminals include this with the message to tell the operator that the EGC receiver has not been updated with the ship's position within the last 4 hours. As explained in the section "Managing your EGC receiver", this will result in the receiver accepting all geographically-addressed messages for the entire Ocean Region, instead of limiting reception of messages to the MET/NAVAREAs specified. If your terminal gives this indication, you should make arrangements for regular position updates.

Figure 9 is an example of a message addressed to a circular area, centred on 40 degrees South and 112 degrees East, and of a radius of 999 nautical miles. Messages may also be addressed to a rectangular area by giving the co-ordinates of the southwest corner, and degrees northerly and easterly.

```

***
EGC:          107  1995/02/13  18:14:35  SAFETY
***
STRATOS CSAT 46464  HYDRNW G 13-FEB-1995  18:14:07  929960
zczc
navarea one 075
baltic sea. kadetrenden. chart ba 2365. dangerous wreck located
53-43. On 12-24.6e marked by south cardinal lightbuoy 100 metres
southward.
nnnn

```

**Figure 7 – Typical EGC SafetyNET navigational warning**

```

EGC:  926          PAGE 1          UTC Time: 94-08-24  09:06:31
LES 121 -MSG 2498-MetWarn/Force  Urgent Call to Area: 2 -NoPos
WARNING ON NAVAREA 2, ISSUED BY METEO-FRANCE, TOULOUSE
WIND SPEED IN BEAUFORTSCALE
WARNING N004
WEST OF FARADAY
FROM 24 AUGUST AT 09 UTC TO 24 AUGUST AT 18 UTC
SOUTHWEST 8.-
EGC.926
nnnn

```

**Figure 8 – Typical EGC SafetyNET meteorological forecast**

```

EGC  048  Page 1          UTC Time: 95-04-28  10:55:43
LES 302 -MSG 14314- Met/NavWarn  Safety Call to Area:
40 S 112 E 999 Pos OK
IDW01W
SECURITE
=
WARNING ISSUED BY BUREAU OF METEOROLOGYPERTH
AT 04271000Z
AT 0600Z
COLD FRONT 39S105E 403117E 43S121E 50S132E MOVING ENE 35KN
AREA AFFECTED
BOUNDED BY SOUTH EAST OF ALINE FROM 50S113E 44S120E 43S129E
NW/SW WINDS 30/40KN  VERY ROUGH HEAVY SWELL
=
+
EGC.048

```

**Figure 9 – Typical message to a circular area**

## EGC receiver types

EGC SafetyNET (and FleetNET) broadcasts can be received using a small Inmarsat C satellite communications terminal. The different classes of receivers are discussed in the Inmarsat Maritime Communications Handbook, available from Inmarsat at the address given in Appendix A.

It should be noted that not all these configurations meet GMDSS requirements, or are recommended by Inmarsat.

## Managing your EGC receiver

This section gives the operator of an EGC receiver advice on how best to set-up and use the receiver, to obtain optimum results from the SafetyNET service.

The section should be read in conjunction with the manufacturer's instructions, for specific information on how to do the following:

- Select a satellite/Ocean Region;
- Program the receiver for additional NAVAREAs METAREAs for which to receive and print messages;
- Update the receiver regularly with the ship's position if automatic update is not available;
- Specify the additional types of MSI message required.
- Ensure that the MES is not transmitting at the scheduled times of MSI broadcasts, as given in a current List of Radio Signals publication.

## The following advisory information, with respect to Inmarsat C, was issued by the US Coast Guard on April 1, 2004

Marine Safety, Security and Environmental Protection  
SAFETY ALERT - LOSS OF INMARSAT C SAFETY MESSAGES  
April 1, 2004 Washington, DC

This advisory notifies users of Inmarsat C ship earth stations that urgent marine information, weather warning and navigational warning broadcast messages, distress-related messages, as well as routine messages may be lost if a printer is not connected to and maintained with the Inmarsat C terminal, or if floppy drive maintenance is not regularly performed on the terminal. Additionally, certain non-GMDSS-approved software (e.g. windows-based software) may freeze up if this maintenance is not performed.

All GMDSS versions of Inmarsat C have approved data terminal equipment (DTE) that interfaces with the user. DTE generally refers to the computer and screen, keyboard and printer (or user interface). These terminals are required to use only Inmarsat approved hardware and software. However, users need to understand that proper usage and housekeeping maintenance of the equipment is essential to ensure optimum user availability.

To avoid problems, and to ensure that unnecessary and irrelevant messages are not received, the recommended operating procedures in the manufacturer's equipment operating handbook and the below procedures should be followed:

**Message/Archive Log:** All ingoing and outgoing messages are recorded on a disk in special log files. Each log file may hold a limited number of messages (limited by disk size or PC storage capacity).

When the free disk space falls below a certain size, the terminal will display an error message asking to insert an empty disk. A new message/archive log file will then be generated on the new disk.

**Disk Directory:** If so configured, ingoing and outgoing messages (OUT.xxx, IN.xxx, EGC.xxx) can be stored on a disk (this is different than the message/archive log), where they can be viewed, erased, printed and copied to different directories. On some models the directory shows the number of files (messages) stored on the disk/directory and this number is limited to 112 files (messages) regardless the free space left. If the disk already holds 112 messages, you will not be able to store any more messages. When the disk is full, use the "erase/delete" command to delete unwanted files and create free space for new messages.

**Message Routing:** Check the message routing option on the terminal. Incoming mail should be routed to at least one of the output media - disk or printer. Enhanced Group Call (EGC) SafetyNET messages with Urgency and Distress priority will be printed out automatically, if a printer is fitted. EGC SafetyNET messages with Safety priority can be printed out (user option), otherwise they will be stored on the disk. EGC FleetNET messages can be printed out (user option), otherwise they will be stored on the disk. If the Inmarsat C is connected to a separate PC, a path for saving incoming and outgoing mail and EGC messages should be inserted/specified per the manufacturer's handbook.

**EGC SafetyNET setting-up:** Ensure that you are logged into the appropriate satellite for the scheduled maritime safety information (MSI) that you wish to receive. Otherwise log in to the satellite that broadcasts the MSI for your required area of operation. Timetables of broadcast and nominated satellites can be found in various national/international publications, such as the International Maritime Organization GMDSS/Circ.8 (see

[http://www.navcen.uscg.gov/marcomms/gmdss/reference\\_gmdss.htm](http://www.navcen.uscg.gov/marcomms/gmdss/reference_gmdss.htm)) or the Admiralty List of Radio Signals, Vol.5.

Ensure that your position (Lat/Long) on the Mobile Earth Station (MES) position screen is updated. Otherwise you will receive and print ALL EGC SafetyNET messages broadcast via the satellite. If automatic position updating is not available, it is essential to manually update the position on a regular basis e.g. every 4 hours. Instructions for doing this are in the manufacturer's handbook.

If properly set-up, your MES will receive automatically all relevant NAVAREA/METAREA and other maritime safety information addressed to the area where you are in. If you require additional information for neighbouring area(s), you must program your terminal to receive this information. Be careful if using the "EGC only" option.

If this option is selected, the terminal will, effectively, be logged out and you will not be able to receive normal messages (mail) on your terminal. Also, if you choose "EGC only", previous EGC settings may be ignored and the terminal may receive all EGC messages within the ocean region.

If Inmarsat C is used for communication (not as a supervisory control and data acquisition (SCADA) or "black box" terminal), it MUST have a DTE terminal which includes a keyboard, Video Display Unit and printer. Every Inmarsat C terminal, if properly configured, set up and maintained, will receive all relevant messages addressed to it.

These messages will be displayed and printed out, stored, or both. Improper settings, including printer settings, not in accordance with the manufacturer's instructions, will degrade the performance.

This advisory was developed in cooperation with Inmarsat Ltd.

Technical questions relating to this alert may be addressed to Mr. Russell Levin at 202.267.1389 or CGComms@comdt.uscg.mil.

This material is provided for informational purpose only and does not relieve any existing domestic or international safety, operational or material requirement.

### **Selective message reception**

Although an EGC receiver will receive and can print all SafetyNET broadcasts made throughout an entire Ocean Region, many messages may not be useful to the ship - for example those applicable to NAVAREAs/METAREAs beyond the ship's planned voyage, or those on subjects not relevant to the ship's circumstances. To avoid a receiver printing a large number of unnecessary messages, it can be programmed to print only essential messages, and to reject all other messages - every receiver is supplied with software which stores the geographical boundaries of the NAVAREAs/METAREAs; the receiver can use this information to print only those messages applicable to the current area, plus any other areas programmed by the operator. (Note, however, that the receiver cannot be programmed to reject some types messages, such as Met/Nav warnings and shore-to-ship distress alerts.)

The receiver examines the message handling instructions (the "C" codes) included with each message, and uses this information to decide which messages to receive.

Similarly, the receiver stores the unique reference number included with each message, and uses this to avoid printing extra copies of those messages already received and printed correctly.

### **Regular position updates**

Your EGC receiver **MUST** be updated regularly with the ship's position.

The reasons for updating your EGC receiver regularly with the ship's position include:

- To decide if the receiver should receive and print a message addressed to a specific geographic area;
- To receive and print only messages for the required areas - if the ship's position has not been updated for 4 hours (depending on the model), the receiver will automatically print or store all geographically addressed messages within the entire Ocean Region;

Another important reason for updating the terminal regularly with the ship's position, while not directly related to the SafetyNET service, is to ensure that the correct position is given if a distress alert has to be sent.

### **Two ways are available to update a terminal with the ship's position:**

- **Automatically**, using an electronic navigational device to a GPS receiver; the use of a GPS (Global Positioning System) receiver to provide position updates is highly recommended. Most modern MES models now contain an integrated GPS receiver, whilst older models may be interconnected to a separate on-board GPS receiver.
- **Manually**, by keying the position co-ordinates directly into the terminal; IMO requires this be done every four hours.

**It is strongly recommended that automatic position updating is used whenever available.**

### **What messages you **MUST** receive**

Under SOLAS requirements (as well as for the safety of all aboard), receipt of the following types of EGC SafetyNET MSI messages is mandatory:

- Shore-to-ship distress alert relays for circular areas; and

- MSI addressed to a circular or rectangular area if your position is contained within such an area;
- Navigational warnings for the current NAVAREA;
- Meteorological warnings or forecasts for the current METAREA.

### **What messages you **MAY** receive**

In addition to the receiving the above mandatory message types, IMO recommends that it also be programmed to receive the following messages:

- MSI for any other NAVAREAs in which the ship is expected to sail. Note that the NAVAREAs specified do not need to be adjacent to the current area.
- Coastal warnings

### **Printing only essential messages**

Use the following instructions in order to ensure that your receiver prints only the essential messages you want, and rejects all others.

### **Reduce the number of alarms**

Your receiver is programmed to give an audible/visual alarm on printing any distress or urgent messages, to which you should respond immediately. To make sure that you do not get any unnecessary alarms, however, you should do the following:

- Keep the ship's position updated, to ensure that the receiver rejects messages for any geographic areas which do not include the ship's position;

### **Good operating practice**

The following advice is given to help you obtain the best possible use of the SafetyNET service:

- Ensure any equipment associated with the EGC receiver is working properly, as indicated in the manufacturer's instructions, and that the printer is loaded with paper/ribbon.
- Make sure that the terminal is not storing unwanted messages, and has storage space for new messages.
- If your printer has an option for printing in a small font, consider selecting this option to reduce the amount of paper used for messages.
- Make sure that your current position is entered into the terminal, if no automatic update, and that it is regularly updated, as discussed in the section Regular position updates on page 18, to ensure that you only receive appropriate MSI throughout your voyage.
- On the terminal, enter all NAVAREAs/METAREAs and coastal areas for which you want to receive MSI, considering your intended voyage. Also enter the Coastal warning message types you want to receive, rejecting any unwanted types.
- While in port, keep the EGC receiver in operation, to ensure that you have received all necessary MSI before sailing.
- To find the time of scheduled MSI broadcasts, refer to a current List of Radio Signals, obtainable from national administrations. At the scheduled time, make sure

that the receiver is tuned to the appropriate channel/Ocean Region, as given in that publication.

Find out the Class of your EGC receive facility (referring to the manufacturer's literature, or to the Inmarsat Maritime Communications Handbook), and note the following points:

- Make sure your Inmarsat C MES monitors the appropriate satellite/Ocean Region at the time of a scheduled broadcast.
- When sailing from one Ocean Region to another ensure that the terminal is manually "Logged out" of one Ocean Region and manually "Logged in" to another. An alarm will sound when synchronisation has been lost due to vessel sailing out of coverage of an Ocean Region. Manually "Logging in" to the new Ocean Region will automatically cause the system to "Log the MES" out of the previous Ocean Region.

Throughout your voyage, ensure that a written log is kept of the identities of all received messages, and a printed copy is kept of all distress traffic. Other messages should be kept on the bridge for as long as they remain in force.

### **What to do about missed messages**

If you think you have missed any messages, for example at a scheduled broadcast time, you can:

- Switch the terminal off and on again - this will clear the internal memory of all stored message IDs, so that if the message is re-broadcast, your receiver will not reject it as a repeated message, and will print/store it.

### **What to do if you don't receive any MSI messages**

If you haven't received any MSI messages, printed or stored, within a 24 hour period:

- Check message availability, referring to Table 1, and/or to a current List of Radio Signals - make sure that the terminal is monitoring the appropriate satellite/Ocean Region at the time of a scheduled broadcast.

### **Who to contact for advice**

You can obtain further information about SafetyNET from the following sources:

- The International SafetyNET Manual, obtainable from IMO at the address given in Appendix A.
- The Master Plan of Shore-based Facilities for the GMDSS, obtainable from IMO.
- Current Lists of Radio Signals, obtainable from national administrations.
- The Inmarsat Maritime Communications Handbook, obtainable from Inmarsat at the address given in Appendix A.

For general advice on the SafetyNET service, contact the Chairman of the International SafetyNET Broadcast Co-ordinating Panel, at the address given in Appendix A.

For general advice on the Inmarsat satellite networks, contact the Inmarsat at the address given in Appendix A.

## Appendix A

**For general information on the International SafetyNET service, and the GMDSS, contact:**

The Chairman  
International SafetyNET Broadcast Co-ordinating Panel  
International Maritime Organisation (IMO)  
4 Albert Embankment  
London SE1 7SR  
Telephone: +44 20 7735 7611  
Fax: +44 20 7587 3210  
Telex: 23588 IMOLDN G

**For general information on the Inmarsat satellite networks, you can contact the Inmarsat Customer Care Centre:**

Customer Care Centre  
Inmarsat Ltd.  
99 City Road  
London EC1 1AX UK  
Telephone: +44 20 7728 1777  
Fax: +44 20 7728 1746  
Telex: 297201 INMSAT G

The Customer Care Centre is normally manned between the hours 0600 to 2359, London local time, Monday to Friday.

Information is also available on the Inmarsat web site: [www.inmarsat.com](http://www.inmarsat.com)

You may also access a directory of IMNs (Inmarsat Mobile Numbers) for a particular vessel via the above web site.

Specific information on Inmarsat's Safety Services and Inmarsat's role within the GMDSS (Global Maritime Distress and Safety System), may be found on the internet at [www.inmarsat.com/safety](http://www.inmarsat.com/safety)

## Appendix B

### REQUIREMENTS FOR RECEIVING SafetyNET MSI BROADCASTS

For a ship to be able to receive SafetyNET MSI broadcasts, certain technical and legal requirements must be met:

The ship must be equipped with a type-approved EGC receiver - this may be a standalone EGC receiver, or a receiver combined with an Inmarsat MES, as defined in the Inmarsat Maritime Communications Handbook.

For optimal performance and GMDSS certification, the EGC receiver/MES should be installed in the vessel in accordance with the Design and Installation Guidelines, available from Inmarsat at the address given in Appendix A.

For the ship to be certificated in the GMDSS, the installation must comply with the GMDSS requirements of the national administration for the country in which the vessel is registered.

(Note, however, that GMDSS certification is not necessary for the receipt of MSI broadcasts, which are free of charge to all ships.)

The MES with EGC receive capability must be activated into the Inmarsat system; this involves:

Completing and submitting a Service Activation Application Form to an ISP or PSA, (Inmarsat Service Provider or Point of Service Activation), dependant on the country of registration of the vessel and if the MES is to be used for GMDSS purposes;

A PVT (Performance Verification Test) may be initiated by the MES, over the satellite link, to confirm that the MES is working correctly.

More information on commissioning and testing is available from the Inmarsat Service Activation Unit, at the address given in Appendix A.

The EGC receiver/MES must be set-up as indicated in the manufacturer's instructions - which includes ensuring that the receiver/MES is tuned (synchronized) to the NCS Common Signalling Channel.

The printer and any other peripherals connected to the receiver/MES must be made ready as indicated in their manufacturer's instructions.

## **Appendix C**

### **GLOSSARY OF TERMS**

**AOR-E:** Atlantic Ocean Region - East.

**AOR-W:** Atlantic Ocean Region - West.

**ASCII:** American Standard Code for Information Interchange - a standard alpha-numeric character set based on 7-bit binary codes.

**BBS:** Bulletin Board Service.

**EGC:** The Enhanced Group Call services provided in the Inmarsat C system, they are:  
the EGC SafetyNET service;  
the EGC FleetNET service, and  
the broadcasting of Inmarsat system messages.

**ENID:** EGC Identification Code used in the EGC FleetNET Service.

**EPIRB:** Emergency Position Indicating Radio Beacon.

**FleetNET:** The EGC FleetNET Service.

**GMDSS:** Global Maritime Distress and Safety System.

**HF:** High Frequency.

**IHO:** The International Hydrographic Organisation.

**IMN:** Inmarsat Mobile Number.

**IMO:** The International Maritime Organisation.

**Inmarsat A:** The original Inmarsat communications system, operating since 1982, based on analog techniques and capable of high quality two-way voice telephony, telex, distress messaging, fax and data services.

**Inmarsat B:** A digital communications system, capable of high quality two-way voice telephony, telex, distress messaging, fax and data services.

**Inmarsat C:** A digital system, operating since 1991, based on low-cost MESs of low power-consumption, using an omni-directional antenna. This system provides the services of global two-way store-and-forward messaging, distress calling (alerting and messaging), EGC SafetyNET and FleetNET, data reporting and polling.

**Inmarsat E:** A distress alerting system based on EPIRBs.

**International Alphabet Number 5:** (Also known as ASCII) - a standard alpha-numeric character set based on 7-bit binary codes.

**IOR:** Indian Ocean Region.

**ISL:** Interstation Signalling Links, used to pass information between LESs and the NCS in an Ocean Region.

**LES:** Land Earth Station, may also be called CES (Coast Earth Station).

**MF:** Medium Frequency.

**MSI:** Maritime Safety Information.

**National Hydrographic Office:** A national Organisation responsible for collecting and distributing navigational warnings.

**National Meteorological Office:** A national Organisation responsible for collecting and distributing meteorological warnings and forecasts.

**NAVAREA/METAREA:** One of the 16 areas of sea defined by the IMO, into which the world's oceans are divided for the dissemination of navigational and meteorological warnings and forecasts.

**NAVTEX:** The International NAVTEX service is the medium frequency radio telex broadcasting system developed by the IMO for the purpose of broadcasting and automatic reception of MSI by means of direct-printing telegraphy.

**NCS:** Network Co-ordination Station, an Earth Station which monitors and controls communication through all the LESs in an Ocean Region.

**Ocean Region:** The coverage area of an Inmarsat satellite, within which a suitably equipped MES can send and receive messages.

**POR:** Pacific Ocean Region.

**PVT:** Performance Verification Test.

**RCC:** Rescue Co-ordination Centre, also may be referred to as (M)RCC i.e. Maritime Rescue Co-ordination Centre.

**SafetyNET:** The International SafetyNET Service.

**SAR:** Search-and-Rescue.

**SOLAS:** The International Convention on the Safety of Life at Sea 1974 (SOLAS), as amended.

**UTC:** Universal Co-ordinated Time.

**WMO:** The World Meteorological Organisation.