Handbook for Marine Radio Communication

Fifth Edition

By

Graham D. Lees
and
William G. Williamson

informa
LONDON
2009
# Contents

**Preface**  
**About the authors**  
**List of figures**  
**List of acronyms and abbreviations**  
**Glossary of terms and definitions**

## CHAPTER 1 GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 GMDSS: overview</td>
<td>1</td>
</tr>
<tr>
<td>1.1.1 Search and Rescue Regions (SRRs)</td>
<td>1</td>
</tr>
<tr>
<td>1.1.2 IAMSAR manual</td>
<td>2</td>
</tr>
<tr>
<td>1.2 GMDSS sea areas</td>
<td>2</td>
</tr>
<tr>
<td>1.3 GMDSS terminology</td>
<td>3</td>
</tr>
<tr>
<td>1.4 GMDSS implementation</td>
<td>4</td>
</tr>
<tr>
<td>1.5 Shipboard equipment for GMDSS</td>
<td>4</td>
</tr>
<tr>
<td>1.5.1 Position updating</td>
<td>6</td>
</tr>
<tr>
<td>1.5.2 Implementation of SOLAS Regulations for passenger ships</td>
<td>6</td>
</tr>
<tr>
<td>1.5.3 EPIRBs on fishing vessels</td>
<td>8</td>
</tr>
<tr>
<td>1.5.4 Recommended GMDSS equipment for small craft</td>
<td>9</td>
</tr>
<tr>
<td>1.6 Minimum GMDSS personnel requirements for ship’s stations and MESs</td>
<td>9</td>
</tr>
<tr>
<td>1.7 Role of the maritime rescue coordination centre (MRCC)</td>
<td>10</td>
</tr>
<tr>
<td>1.7.1 SARNET</td>
<td>11</td>
</tr>
<tr>
<td>1.7.2 Registration database for GMDSS</td>
<td>11</td>
</tr>
<tr>
<td>1.8 GMDSS master plan</td>
<td>12</td>
</tr>
<tr>
<td>1.9 Availability and maintenance of GMDSS equipment: terminology</td>
<td>12</td>
</tr>
<tr>
<td>1.10 Availability and serviceability of GMDSS equipment</td>
<td>13</td>
</tr>
<tr>
<td>1.10.1 Requirements for ensuring availability</td>
<td>13</td>
</tr>
<tr>
<td>1.10.2 Duplication of equipment for ensuring availability</td>
<td>13</td>
</tr>
<tr>
<td>1.10.3 Shore-based maintenance for ensuring availability</td>
<td>14</td>
</tr>
<tr>
<td>1.10.4 At-sea maintenance for ensuring availability</td>
<td>14</td>
</tr>
<tr>
<td>1.10.5 Acceptable combinations (or equivalent)</td>
<td>14</td>
</tr>
<tr>
<td>1.11 Availability of GMDSS equipment: further requirements</td>
<td>15</td>
</tr>
<tr>
<td>1.12 False distress alerts</td>
<td>15</td>
</tr>
<tr>
<td>1.12.1 Action to be taken by owners, masters and skippers</td>
<td>16</td>
</tr>
<tr>
<td>1.13 False distress alerts: reporting procedures</td>
<td>16</td>
</tr>
<tr>
<td>1.13.1 Other problems: misuse of DSC acknowledgement</td>
<td>17</td>
</tr>
<tr>
<td>1.13.2 GMDSS equipment and operator competency</td>
<td>18</td>
</tr>
</tbody>
</table>

## CHAPTER 2 DISTRESS, URGENCY AND SAFETY COMMUNICATIONS

**Part I: Operational procedures for distress and urgency and safety communication in GMDSS**

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 General operational procedures</td>
<td>19</td>
</tr>
<tr>
<td>2.1.1 Authority of the Master</td>
<td>19</td>
</tr>
<tr>
<td>2.2 Distress alerting</td>
<td>19</td>
</tr>
<tr>
<td>2.2.1 Radiotelephony distress call</td>
<td>20</td>
</tr>
<tr>
<td>2.2.2 Radiotelephony distress message</td>
<td>20</td>
</tr>
<tr>
<td>2.2.3 Radiotelex distress message</td>
<td>21</td>
</tr>
<tr>
<td>2.3 Shore-to-ship distress alert relay</td>
<td>21</td>
</tr>
<tr>
<td>2.4 Distress alert by a station not itself in distress</td>
<td>21</td>
</tr>
<tr>
<td>2.4.1 Radiotelephony distress relay</td>
<td>21</td>
</tr>
</tbody>
</table>
## Contents

### 2.5 Acknowledgement of receipt of distress alerts

- **2.5.1 General information**
- **2.5.2 Satellite service**
- **2.5.3 DSC**
- **2.5.4 Ships’ reactions on receipt of a distress alert**

### 2.6 Acknowledgement by radiotelephony and radio telex

- **2.6.1 Radiotelephony**
- **2.6.2 Radiotelex**

### 2.7 Acknowledging receipt of distress alerts by coast stations or LES

- **2.7.1 Satellite service**
- **2.7.2 DSC**

### 2.8 Acknowledging receipt of distress alerts by ship stations or MES

### 2.9 Preparations for handling distress traffic

### 2.10 Distress traffic

### 2.11 Imposing silence

### 2.12 Resumption of normal working

### 2.13 False distress alert sent by DSC

### 2.14 On-scene communications

### 2.15 On-scene coordinator

### 2.16 Search and rescue situation reports (SITREPs)

### 2.17 Shore-to ship distress communications with MRCC

### 2.18 Locating and homing signals

### 2.19 Changing for distress communication

### 2.20 Operational procedures for urgency messages in the GMDSS

### 2.21 Operational procedures for safety messages in the GMDSS

### 2.22 Medical transports

### 2.23 Inter-ship safety of navigation communication

### 2.24 Medical advice: general information

### 2.25 MEDEVAC: general information

- **2.25.1 MEDEVAC: information to be furnished to MRCC**
- **2.25.2 Radiocommunication with helicopters**

### 2.26 Medical advice via Inmarsat

### 2.27 Medical assistance via Inmarsat

### 2.28 Medical advice via UK coastguard stations

### 2.29 Medical assistance via UK coastguard stations

### 2.30 Identification of neutral ships or aircraft in war zones

### 2.31 Piracy and armed robbery at sea: use of radio

- **2.31.1 Radio procedures**
- **2.31.2 Radio watch-keeping and responses**
- **2.31.3 Standard message formats**
- **2.31.4 Secreted VHF transceiver**
- **2.31.5 Automatic identification system (AIS)**
- **2.31.6 Piracy Reporting Centre**
- **2.31.7 Initial message: piracy attack/armed robbery report**
- **2.31.8 Piracy/armed robbery attack/suspicious act report**
- **2.31.9 Reporting incidents**
- **2.31.10 Acts of piracy and armed robbery allegedly committed against ships reported by member states or international organisations in consultative status**

### 2.32 The ship security alert system (SSAS)

### Part II: Use of frequencies for distress, urgency and safety

- **2.33 GMDSS: general provisions**
- **2.34 Distress frequencies**
- **2.35 Aeronautical frequencies**
- **2.36 GMDSS: VHF channel usage**
- **2.37 Satellite service**
- **2.38 Survival craft and GMDSS**
- **2.39 Distress and safety communications: protection of frequencies**
- **2.40 GMDSS: general watch-keeping arrangements**

---

x
CHAPTER 3 DIGITAL SELECTIVE CALLING (DSC)

3.1 DSC: introduction
3.2 DSC digital coding

Part I: DSC distress, urgency and safety alerting
3.3 Distress alerting by DSC: general information
3.4 DSC distress alerts
3.5 Format of DSC distress alert acknowledgement by coast stations
3.6 Acknowledgement of received DSC distress alert by ship stations
3.7 Distress traffic
3.8 Rebroadcast of distress information by coast stations
3.9 HF distress alerting
3.10 DSC urgency alerts
3.11 Urgency messages and DSC
3.11.1 Reception of urgency alert by DSC
3.12 DSC safety alerts
3.12.1 Reception of safety alerts by DSC
3.13 DSC watch-keeping arrangements
3.14 DSC scanning receivers
3.15 UK distress and safety watch-keeping arrangements
3.15.1 HF DSC watch-keeping arrangements
3.16 Distress procedure using DSC and RT on VHF
3.17 Distress procedure using DSC and RT on MF
3.18 Distress procedure using DSC and RT on HF
3.19 Ship-to-ship distress alerting in sea Areas A3 or A4

Part II: Routine DSC calling procedure
3.20 Conditions relating to DSC equipment
3.21 DSC: use of frequencies
3.22 MF DSC: bands between 415 kHz and 526.5 kHz
3.23 Bands between 1 606.5 kHz and 4 000 kHz
3.24 High frequency (HF) DSC: bands between 4 000 kHz and 27 500 kHz
3.25 VHF DSC: bands between 156 MHz and 174 MHz
3.26 DSC Regulations: method of calling
3.27 DSC Regulations: acknowledgement of routine calls
3.28 DSC shore-to-ship calls
3.29 Ship receives DSC call from a coast station
3.30 Routine ship-to-shore DSC calls
3.31 DSC watch-keeping: routine calls
3.32 DSC routine calls for automatic connection
3.33 DSC testing
3.34 DSC: European testing arrangements

CHAPTER 4 SAFETY-RELATED EQUIPMENT AND SERVICES

4.1 Emergency position indicating radiobeacon (EPIRB): introduction
4.2 COSPAS–SARSAT: introduction
4.3 COSPAS–SARSAT: coverage modes
4.4 COSPAS–SARSAT: 406 MHz beacons
4.5 COSPAS–SARSAT: general information
4.6 COSPAS–SARSAT: MCCs
4.7 COSPAS–SARSAT: satellite information
4.8 COSPAS–SARSAT: termination of satellite alerting service on 121.5 MHz
4.9 EPIRBs: routine maintenance and checks
4.10 EPIRBs: further maintenance requirements
4.10.1 EPIRBs: guidelines for shore-based maintenance providers for satellite EPIRBs
4.10.2 EPIRBs: guidelines on annual testing of 406 MHz satellite EPIRBs
4.10.3 Clarification on EPIRB maintenance and testing
4.11 EPIRB registration
4.12 Search and rescue transponders (SARTs)
4.12.1 SART signals at close range 82
4.12.2 Factors that increase the visibility of a SART 83
4.13 AIS SARTs 83
4.14 SARTs: tests and checks 84
4.15 Maritime safety information (MSI) 84
4.16 NAVTEX 86
4.17 Enhanced group call (EGC) 87
4.17.1 Setting up EGC receiver 88
4.18 MSI in UK waters 88
4.19 Worldwide navigational warning service (WWNWS) 88
4.20 Portable hand-held survival craft VHF transceivers 90

CHAPTER 5 SATELLITE COMMUNICATIONS 93
5.1 Master's authority 93
5.2 The Inmarsat organisation 93
5.3 Satellite frequencies 97
5.4 Land earth stations 97
5.5 Antenna alignment 97
5.6 Inmarsat mobile numbers (IMN) 97
5.7 Multiple identity of a single MES 98
5.8 Inmarsat priority indicators 98
5.9 Inmarsat-F (Fleet) system 98
5.10 Fleet 77 services 99
5.11 Fleet LES access codes 99
5.12 Fleet 77 distress procedures 99
5.13 Fleet 55 system and services 100
5.14 Fleet 33 system and services 100
5.15 Fleet broadband system and services 100
5.16 FleetPhone system and services 101
5.17 Inmarsat-B system 101
5.18 Inmarsat-B services 101
5.19 Inmarsat-B and Inmarsat-M LES access codes 102
5.20 Inmarsat-B telex distress message generator (DMG) 102
5.21 Inmarsat-B distress transmission procedure 103
5.22 Inmarsat-C system 103
5.23 Inmarsat-C services 104
5.24 Inmarsat-C LES access codes 104
5.25 Inmarsat-C distress alerting 105
5.26 Inmarsat-C distress priority message 106
5.27 Inmarsat-C special codes for urgency and safety 106
5.28 Inmarsat-C logging on 106
5.29 Inmarsat-C logging off 107
5.30 Inmarsat-C communications 107
5.31 Inmarsat-C message addresses 107
5.32 Inmarsat-C two-digit service codes 108
5.33 Inmarsat-C non-delivery notification codes 108
5.34 Inmarsat mini-C system 109
5.35 Inmarsat-M system and services 109
5.36 Inmarsat-M LES access codes 109
5.37 Inmarsat-M distress, urgency and safety alerting 110
5.38 Inmarsat mini-M system and services 110
5.39 Inmarsat urgency and safety procedures 110
5.40 Inmarsat telephony two-digit codes 111
5.41 Telephone calls via Inmarsat 112
5.42 Telephone calls to another MES 113
5.43 Single network access code (SNAC) 113
5.44 Telephone calls to ships fitted with VHF/MF/HF RT equipment 113
5.45 Charges for Inmarsat telephone calls
5.46 Data communications via Inmarsat
5.47 Data network identification codes (DNICs)
5.48 Facsimile via Inmarsat
5.49 Telex via Inmarsat
5.50 Inmarsat telex two-digit codes
5.51 Telex answerbacks
5.52 Telex calls via Inmarsat-B
5.53 Telex dialling
5.54 Format of radiotelegrams, AMVER and medical messages
5.55 Telex and greetings telex letters
5.56 Terminating Inmarsat telex calls
5.57 Inmarsat telex calls to another MES
5.58 Inmarsat telex ocean region codes
5.59 Inmarsat telex calls to ships fitted with MF/HF equipment
5.60 Inmarsat telex service fault codes
5.61 Iridium satellite system
5.62 Iridium services
5.63 Iridium OpenPort

CHAPTER 6 RADIO TELEX

6.1 Avoidance of interference
6.2 Telex modes of emission
6.2.1 Bands between 415 kHz and 535 kHz
6.2.2 Bands between 1 605 kHz–4 000 kHz and 4 000 kHz–27 500 kHz
6.3 Telex communication between two stations
6.4 Telex broadcasts to more than one receiving station
6.5 Telex public correspondence
6.6 Selcall numbers
6.7 Manual telex calling procedures
6.7.1 Ship-to-shore telex calling
6.7.2 Shore-to-ship telex calling
6.7.3 Telex inter-ship communications
6.8 Automatic telex calling procedures
6.8.1 Ship-to-shore automatic calling
6.8.2 Shore-to-ship automatic calling
6.9 Telex transmission format
6.10 Telex message format
6.11 FEC operation mode
6.12 Acknowledgement of FEC messages
6.13 Telex frequencies
6.14 Telex distress frequencies
6.15 Protection of frequencies
6.16 Test transmissions
6.17 Telex answerback
6.18 Modes of telex operation
6.18.1 ARQ
6.18.2 FEC
6.18.3 SELFEC
6.18.4 Direct
6.19 Procedure for initiating a radio telex circuit to a coast station
6.20 Traffic lists on telex
6.21 Telex commands as used in the automatic radio telex system
6.22 Telex advice codes as used in the automatic radio telex system
6.23 Charges for telex calls
CHAPTER 7  RADIOTELEPHONY (RT)  

Part I: General RT procedure in the maritime mobile service  
7.1 RT: general procedures  
7.2 The use of VHF at sea  
7.2.1 VHF communication technique  
7.2.2 VHF communication procedure  
7.2.3 Standard messages  
7.3 RT: station identification  
7.3.1 Coast stations  
7.3.2 Ship stations  
7.4 Simplex and duplex  
7.5 Ship-to-shore RT procedures  
7.6 Preliminary RT operations  
7.7 RT calls from ships  
7.8 RT calls from coast stations  
7.9 RT traffic lists  
7.10 Order of working  
7.11 Repetition of calls  
7.12 RT call and reply  
7.13 Frequency to be used for call and reply  
7.13.1 Bands between 1 605 kHz and 4 000 kHz  
7.13.2 Bands between 4 000 kHz and 27 500 kHz  
7.13.3 VHF band (156–174 MHz)  
7.14 Indication of the frequency to be used for traffic  
7.14.1 Bands between 1 605 kHz and 4 000 kHz  
7.14.2 Bands between 4 000 kHz and 27 500 kHz  
7.14.3 VHF band (156–174 MHz)  
7.15 Agreeing the frequency to be used for traffic  
7.16 Reception difficulties  
7.17 Sending traffic  
7.18 Establishment of RT calls  
7.19 Transmission of radiotelegrams by RT  
7.20 Procedural words  
7.21 Acknowledgement of receipt  
7.22 Duration and control of working  
7.23 RT tests  
7.24 Establishing RT calls using DSC  
7.25 On board communications  
7.26 Pilot service: calling procedure  
7.27 Port operations and ship movement services  

Part II: Maritime RT bands: use of frequencies  
7.28 RT: introduction  
7.28.1 Nomenclature of frequency bands used in radiocommunication  
7.28.2 SSB designation  
7.29 Bands between 1 606.5 kHz and 4 000 kHz  
7.29.1 Mode of emission of stations  
7.29.2 Use of 2 182 kHz  
7.30 MF RT working frequencies in Region 1  
7.30.1 MF ship-to-shore and inter-ship working frequencies  
7.30.2 MF inter-ship working frequencies  
7.31 Bands between 4 000 kHz and 27 500 kHz  
7.31.1 Mode of emission of stations  
7.31.2 Call and reply  
7.31.3 Traffic  
7.31.4 HF transmission frequencies for simplex operation  
7.32 VHF bands between 156 MHz and 174 MHz  
7.32.1 Call and reply
### CHAPTER 8   GENERAL REGULATIONS

<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1</td>
</tr>
<tr>
<td>8.2</td>
</tr>
<tr>
<td>8.3</td>
</tr>
<tr>
<td>8.4</td>
</tr>
<tr>
<td>8.5</td>
</tr>
<tr>
<td>8.6</td>
</tr>
<tr>
<td>8.7</td>
</tr>
<tr>
<td>8.8</td>
</tr>
<tr>
<td>8.9</td>
</tr>
<tr>
<td>8.10</td>
</tr>
<tr>
<td>8.11</td>
</tr>
<tr>
<td>8.12</td>
</tr>
<tr>
<td>8.13</td>
</tr>
<tr>
<td>8.14</td>
</tr>
<tr>
<td>8.15</td>
</tr>
<tr>
<td>8.16</td>
</tr>
<tr>
<td>8.17</td>
</tr>
<tr>
<td>8.18</td>
</tr>
<tr>
<td>8.19</td>
</tr>
<tr>
<td>8.20</td>
</tr>
<tr>
<td>8.21</td>
</tr>
<tr>
<td>8.22</td>
</tr>
<tr>
<td>8.23</td>
</tr>
<tr>
<td>8.24</td>
</tr>
<tr>
<td>8.25</td>
</tr>
<tr>
<td>8.26</td>
</tr>
<tr>
<td>8.27</td>
</tr>
<tr>
<td>8.28</td>
</tr>
<tr>
<td>8.29</td>
</tr>
<tr>
<td>8.30</td>
</tr>
<tr>
<td>8.31</td>
</tr>
<tr>
<td>8.32</td>
</tr>
<tr>
<td>8.33</td>
</tr>
<tr>
<td>8.34</td>
</tr>
<tr>
<td>8.35</td>
</tr>
<tr>
<td>8.36</td>
</tr>
<tr>
<td>8.37</td>
</tr>
<tr>
<td>8.38</td>
</tr>
<tr>
<td>8.39</td>
</tr>
<tr>
<td>8.40</td>
</tr>
<tr>
<td>8.41</td>
</tr>
<tr>
<td>8.42</td>
</tr>
<tr>
<td>8.43</td>
</tr>
</tbody>
</table>

### CHAPTER 9   RADIO TRAFFIC

<table>
<thead>
<tr>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1</td>
</tr>
<tr>
<td>9.2</td>
</tr>
<tr>
<td>9.3</td>
</tr>
<tr>
<td>9.4</td>
</tr>
<tr>
<td>9.5</td>
</tr>
<tr>
<td>9.6</td>
</tr>
<tr>
<td>9.6.1</td>
</tr>
</tbody>
</table>
### CHAPTER 11  ELECTRONIC POSITION-FIXING SYSTEMS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1</td>
<td>Updating position in GMDSS radio equipment</td>
<td>199</td>
</tr>
<tr>
<td>11.2</td>
<td>Global positioning system (GPS)</td>
<td>199</td>
</tr>
<tr>
<td>11.3</td>
<td>Global navigation satellite system (GLONASS)</td>
<td>200</td>
</tr>
<tr>
<td>11.4</td>
<td>Galileo navigation system</td>
<td>200</td>
</tr>
<tr>
<td>11.5</td>
<td>Integrated GPS and GLONASS</td>
<td>201</td>
</tr>
<tr>
<td>11.6</td>
<td>Differential GPS (DGPS) and satellite-based augmentation systems (SBAS)</td>
<td>201</td>
</tr>
<tr>
<td>11.6.1</td>
<td>Differential GPS (DGPS)</td>
<td>201</td>
</tr>
<tr>
<td>11.6.2</td>
<td>Satellite-based augmentation systems (SBAS)</td>
<td>202</td>
</tr>
<tr>
<td>11.7</td>
<td>Loran-C</td>
<td>202</td>
</tr>
<tr>
<td>11.8</td>
<td>Integrated Loran-C and satellite navigation systems</td>
<td>205</td>
</tr>
<tr>
<td>11.9</td>
<td>VHF direction-finding service</td>
<td>205</td>
</tr>
<tr>
<td>11.10</td>
<td>Radar beacons (Racons and Ramarks)</td>
<td>208</td>
</tr>
<tr>
<td>11.11</td>
<td>Automatic identification system (AIS)</td>
<td>208</td>
</tr>
<tr>
<td>11.12</td>
<td>UK automatic ship identification and reporting system</td>
<td>209</td>
</tr>
<tr>
<td>11.13</td>
<td>Long-range identification and tracking system (LRIT)</td>
<td>209</td>
</tr>
</tbody>
</table>

### CHAPTER 12  CERTIFICATION

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.1</td>
<td>Certification for personnel of ship stations and MESs</td>
<td>213</td>
</tr>
<tr>
<td>12.2</td>
<td>Categories of certificates for ship station and MES operators on GMDSS ships</td>
<td>213</td>
</tr>
<tr>
<td>12.3</td>
<td>Conditions for the issue of operators' certificates</td>
<td>213</td>
</tr>
<tr>
<td>12.4</td>
<td>Certificates of competency and service qualifications of radio personnel</td>
<td>214</td>
</tr>
<tr>
<td>12.5</td>
<td>Additional knowledge/training requirements for RT operators and Radio Officers</td>
<td>215</td>
</tr>
<tr>
<td>12.6</td>
<td>Minimum certification requirements according to vessel type</td>
<td>216</td>
</tr>
<tr>
<td>12.7</td>
<td>The Association of Marine Electronic and Radio Colleges (AMERC)</td>
<td>216</td>
</tr>
<tr>
<td>12.7.1</td>
<td>Regional Examination Centres (RECs)</td>
<td>217</td>
</tr>
<tr>
<td>12.8</td>
<td>GMDSS examination structure in the UK</td>
<td>217</td>
</tr>
<tr>
<td>12.8.1</td>
<td>GMDSS examination appeals procedure</td>
<td>218</td>
</tr>
<tr>
<td>12.9</td>
<td>CEPT GMDSS General Operator's Certificate: outline examination syllabus</td>
<td>218</td>
</tr>
<tr>
<td>12.10</td>
<td>CEPT GMDSS General Operator's Certificate: detailed examination syllabus</td>
<td>219</td>
</tr>
<tr>
<td>12.11</td>
<td>ROC examination structure</td>
<td>224</td>
</tr>
<tr>
<td>12.11.1</td>
<td>Conduct of ROC GMDSS examination and appeals procedure</td>
<td>225</td>
</tr>
<tr>
<td>12.12</td>
<td>CEPT GMDSS Restricted Operator's Certificate: outline examination syllabus</td>
<td>225</td>
</tr>
<tr>
<td>12.13</td>
<td>CEPT GMDSS Restricted Operator's Certificate: detailed examination syllabus</td>
<td>225</td>
</tr>
<tr>
<td>12.14</td>
<td>Radio certification for non-SOLAS vessels: general information</td>
<td>228</td>
</tr>
<tr>
<td>12.14.1</td>
<td>Long Range Certificate (LRC)</td>
<td>229</td>
</tr>
<tr>
<td>12.14.2</td>
<td>Short Range Certificate (SRC)</td>
<td>229</td>
</tr>
<tr>
<td>12.15</td>
<td>LRC: examination structure</td>
<td>229</td>
</tr>
<tr>
<td>12.15.1</td>
<td>LRC satellite module: examination structure</td>
<td>230</td>
</tr>
<tr>
<td>12.15.2</td>
<td>LRC GMDSS examination appeals procedure</td>
<td>230</td>
</tr>
<tr>
<td>12.16</td>
<td>CEPT Long Range Certificate (LRC): outline examination syllabus</td>
<td>230</td>
</tr>
<tr>
<td>12.17</td>
<td>CEPT Long Range Certificate (LRC): detailed examination syllabus</td>
<td>231</td>
</tr>
<tr>
<td>12.18</td>
<td>LRC, Satellite module: syllabus</td>
<td>234</td>
</tr>
<tr>
<td>12.19</td>
<td>CEPT Short Range Certificate (SRC): outline examination syllabus</td>
<td>235</td>
</tr>
<tr>
<td>12.20</td>
<td>CEPT Short Range Certificate (SRC): detailed examination syllabus</td>
<td>235</td>
</tr>
<tr>
<td>12.21</td>
<td>UK Operator's certificates and Authorities to Operate</td>
<td>238</td>
</tr>
<tr>
<td>12.22</td>
<td>List of AMERC Regional Examination Centres: UK</td>
<td>239</td>
</tr>
<tr>
<td>12.22.1</td>
<td>List of AMERC Regional Examination Centres: overseas</td>
<td>240</td>
</tr>
<tr>
<td>12.23</td>
<td>MNTB ETO Certificate: proposed syllabus</td>
<td>241</td>
</tr>
<tr>
<td>12.24</td>
<td>Electronic Navigational Equipment Maintenance Certificate (ENEM)</td>
<td>244</td>
</tr>
<tr>
<td>12.25</td>
<td>GMDSS/ENEM Maintenance Certificates: proposed examination structure</td>
<td>245</td>
</tr>
<tr>
<td>12.25.1</td>
<td>GMDSS/ENEM Maintenance Certificates: entry requirements</td>
<td>245</td>
</tr>
</tbody>
</table>
Contents

APPENDICES

<table>
<thead>
<tr>
<th></th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IMO Guidelines for the Avoidance of False Distress Alerts</td>
<td>247</td>
</tr>
<tr>
<td>2</td>
<td>United Kingdom and Irish Rescue Centre Contact Details</td>
<td>249</td>
</tr>
<tr>
<td>3</td>
<td>Standard Marine Navigational Vocabulary</td>
<td>255</td>
</tr>
<tr>
<td>4</td>
<td>International Morse Code Signals and Phonetic Alphabet</td>
<td>261</td>
</tr>
<tr>
<td>5</td>
<td>International Telephone Dialling Codes</td>
<td>289</td>
</tr>
<tr>
<td>6</td>
<td>International Telex Dialling Codes</td>
<td>293</td>
</tr>
<tr>
<td>7</td>
<td>Allocation of Maritime Identification Digit (MID) Series</td>
<td>297</td>
</tr>
<tr>
<td>8</td>
<td>GMDSS Distress, Urgency and Safety Frequencies</td>
<td>301</td>
</tr>
<tr>
<td>9</td>
<td>List of Websites</td>
<td>311</td>
</tr>
<tr>
<td>10</td>
<td>International Call Sign Series</td>
<td>313</td>
</tr>
<tr>
<td>11</td>
<td>Code of Safe Working Practice (COSWP)</td>
<td>315</td>
</tr>
<tr>
<td>12</td>
<td>List of MCA Authorised Persons for the Survey of Radio Installations on Passenger Ships, Fishing Vessels and Unclassed Cargo Vessels</td>
<td>321</td>
</tr>
<tr>
<td>13</td>
<td>ITU MF RT Ship-to-Shore Working Channels</td>
<td>323</td>
</tr>
</tbody>
</table>

Index                                                                 | 325  |

xviii
Index

[References are to section number. References to Appendices are to App. 1, App. 2 etc]

**GMDSS** = Global Maritime Distress and Safety System

**VHF** = Very High Frequency

**HF** = High Frequency

**MF** = Medium Frequency

AAIC (Accounting Authority Identification Code), 9.17–9.17.2

Accidental activation
distress alerts, 1.13

Accidental transmission
distress alerts, 1.13, 3.3

DSC (Digital Selective Calling) distress alerts, 3.3

Accounting Authority Identification Code (AAIC), 9.17–9.17.2

Acknowledgement of calls
DSC (Digital Selective Calling) routine calls
bands between 1 605 kHz and 4 000 kHz, 3.23
generally, 3.27
HF, 3.23
MF, 3.23
radiotelephony, 7.21
transmission method, 3.28
very high frequency, 3.25

Acknowledgement of distress alerts
coast stations, by, 2.7–2.7.2
DSC (Digital Selective Calling), 2.5–2.8
coast stations, by, 3.5
ship stations, by, 3.6
land earth station (LES), by, 2.7.1
mobile earth station (MES), by, 2.8
radiotelephony, 2.6.1
radiotelex, 2.6.2
Rescue Coordinating Centre (RCC), by, 2.7.1
satellite service, 2.5.2
ship stations, by, 2.8

DSC (Digital Selective Calling)
and see DSC (Digital Selective Calling)
distress alerts
acknowledgements, 3.5–3.6
distress alert relay, 3.5–3.9
distress traffic, 3.7
generally, 2.5.3, 3.3–3.4
sending on HF, 3.9–3.10
summary, 3.16–3.18
urgency and safety calls, 3.12
watch-keeping, 3.18–3.15
radiotelephony message, 2.6.1
radiotelex message, 2.6.2
shore-to-ship relay, 2.3
station not in distress, by, 2.4–2.4.1

Amateur radio stations
Radio Regulations, 8.31

AMERC (Association of Marine Electronic and Radio Colleges)
address, 12.4
generally, 12.6

AMVER (Automated Mutual-assistance Vessel Rescue)
radio traffic, 9.31

Answerbacks
radio telex, 6.17
telex via Inmarsat, 5.51

Apparatus
technical requirements, 8.33

Armed robbery attack alerts
after attack reports, 2.31.9
handheld Iridium telephones, 2.31.4
increase in attacks, 2.31
initial message, 2.31.7
radio personnel, 2.31.1
radio watch-keeping, 2.31.2
report, 2.31.7
Reporting Centre, 2.31.6
secreted VHF receiver, 2.31.3
standard message formats, 2.31.3
suspicious act report, 2.31.8
Index

ARQ (Automated Repetition Request) mode radio telex, 6.18.1
Association of Marine Electronic and Radio Colleges (AMERC) address, 12.4
generally, 12.6
At-sea maintenance (ASM) GMDSS, 1.10.4
Authorised persons for radio installations, list of MCA, App.12
Authority of the master see also Master's authority Authority to Operate (ATO) operator certification, 12.21
Authority to Operate (ATO) operator certification, 12.21
Automatic telex calling procedures automatic calls, 9.6.1
Automatic Identification and Reporting System (AIRS) electronic position fixing, 11.12
Automatic identification system (AIS) electronic position fixing, 11.11
piracy, 2.31.5
Automatic Mutual-assistance Vessel Rescue (AMVER) radio traffic, 9.31
satellite communications, 5.54
Automatic ship identification and Reporting system (AIRS) electronic position fixing, 11.12
Automatic telex calling procedures commands, 6.21
ship-to-shore, 6.8.1
shore-to-ship, 6.8.2
Avoidance of interference Radio Regulations, 8.6
radio telex, 6.1
Batteries automatic battery charges, 8.37
capacity, 8.35
BBC meteorological services, 10.5-10.6
Bridge-to-bridge communications, 1.3
Call and reply radiotelephony MF, 7.13.1, 7.31.2
generally, 7.12
HF, 7.13.2
VHF, 7.32.1, 7.13.3
Calling frequencies DSC (Digital Selective Calling) routine calls, 3.25
radiotelephony, and agreement of, 7.15
Call signs international call signs, list of, App. 10
Radio Regulations, 8.15
Cargo ships under 300 tons, 1.4
Certification of GMDSS operators additional requirements, 12.4–12.6
appeals, 12.8.1, 12.11.1, 12.15.2
Authority To Operate (ATO), 12.21
certificate categories, 12.2
competency certificates, 12.4
condition for issue, 12.3
Certification of GMDSS operators—cont.
Electronic Navigational Equipment Maintenance (ENEM) Certificate entry requirements, 12.25.1
examination structure, 12.25
generally, 12.29
examination structure ENEM (Electronic Navigational Equipment Maintenance), 12.25
examination centres, 12.7.1
General Operator's Certificate (GOC), 12.7–12.9
Long Range Certificate, 12.14.1
Restricted Operator's Certificate (ROC), 12.11–12.11.1
Short Range Certificate, 12.14.2
General Operator's Certificate (GOC) appeals procedure, 12.8.1
detailed syllabus, 12.10
examination structure, 12.8
outline syllabus, 12.9
generally, 12.1
Long Range Certificate appeals procedure, 12.15.2
detailed syllabus, 12.17
examination structure, 12.15
generally, 12.14
outline syllabus, 12.16
satellite module, 12.15.1
satellite module syllabus, 12.18
Merchant Navy Training Board ETO certificate, 12.24
non-SOLAS vessel radio operators, 12.14–12.18
Regional Examination Centres (RECs) generally, 12.7.1
overseas list, 12.22.1
UK list, 12.22
Restricted Operator's Certificate (ROC) appeals procedure, 12.11.1
conduct of examination, 12.11.1
detailed syllabus, 12.13
generally, 12.11
outline syllabus, 12.12
Short Range Certificate detailed syllabus, 12.20
generally, 12.14.2
outline syllabus, 12.19
STCW (Standards of Training, Certification and Watchkeeping) endorsement, 12.4
Channel usage distress alerts, 2.36
Charges distress alerts, 2.19
Inmarsat system, 5.45
radio telex, 6.23
radio traffic, 9.5
radiotelephone calls, automatic calls, 9.6
operator connected, 9.6.1
refunds, 9.7
special charges, 9.6.2
telephone calls via Inmarsat, 5.45
terrestrial services, 9.5
Classes of emission Radio Regulations, 8.28
Coast stations acknowledgement of receipt of alerts, 2.7–2.7.2
hours of service, 8.32

328
Coast stations—cont.

Maritime Rescue Coordinators’ Centre (MRCC), 1.7
radio regulation 8.15
radio telex circuit, 6.19
watch-keeping arrangements, 2.40
Coastguard stations
medical advice and assistance, 2.28
meteorological services, 10.5
Code of Safe Working Practice (COSWP), App. 11

Commands
radio telex, 6.21

Competency
operator certification, 12.4

Control of working
Radio Regulations, 8.22

Coordinated universal time
Radio Regulations, 8.18

COSPAS-SARSAT (Search and Rescue Satellite System), 4.2--4.7

coverage modes, 4.3
406 MHz beacons, 4.4
MCCs, 1.7, 4.6
satellite information, 4.7
termination of system on 121.5 MHz

COSWP (Code of Safe Working Practice), App. 11

Data communications
Inmarsat, 5.46
network identification codes, 5.47

Dialling codes
telephone, App. 5
telex, App. 6

Differential Global positioning system (GPS)
electronic position fixing, 11.6.1

Digital Selective Calling (DSC), 3.1--3.34
advantages, 3.1
digital coding, 3.2
distress alerts, 2.5--2.8, 3.4

and see DSC (Digital Selective Calling) distress alerts
acknowledgements, 3.5--3.6
distress alert relay, 3.8--3.9
distress traffic, 3.7
general information, 3.3
sending on HF, 3.9--3.10
summary, 3.16--3.18
urgency and safety calls, 3.12
watch-keeping, 3.13--3.15
false distress alerts, 1.13.1

routine calling procedure, 3.20--3.33

and see DSC (Digital Selective Calling) routine calls
acknowledgement of calls, 3.27--3.28
automatic connection, 3.33
calling frequencies, 3.25
conditions, 3.20
method, 3.26
ship-to-shore calls, 3.30
shore-to-ship calls, 3.29
use of frequencies, 3.21--3.25
watch-keeping, 3.31

scanning receivers, 3.14
testing, 3.33--3.34
European arrangements, 3.34
2187.5 kHz, on, 3.34

use, 3.1

watch-keeping, 3.1

Direct mode
radio telex, 6.18.4

Distress alarm panel
passenger ships, 1.5.2

Distress alert relay
DSC (Digital Selective Calling), 2.4.1, 3.8, 3.9
shore-to-ship, 2.12

Distress alert transmissions, 1.3

Distress communications
acknowledgement of receipt of alerts
coast stations, by, 2.7--2.7.2
DSC (Digital Selective Calling), 2.5.3
land earth station (LES), by, 2.7.1
mobile earth station (MES), by, 2.8
radiotelephony, 2.6.1
radiotelex, 2.6.2
Rescue Coordinating Centre (RCC), by, 2.7.1
satellite service, 2.5.2

ship stations, by, 2.8
aeronautical frequencies, 2.35
alarms
acknowledgement of receipt, 2.5--2.8
DSC (Digital Selective Calling) distress alert, 2.5.3, 2.13
false alerts, 2.13
introduction, 2.5.1
radiotelephony message, 2.6.1
radiotelex message, 2.6.2
shore-to-ship relay, 2.12
station not in distress, by, 2.4--2.4.1

channel usage, 2.36
charges, 2.19
distress traffic, 2.10

DSC (Digital Selective Calling), 2.5.3, 3.3--3.13
and see DSC (Digital Selective Calling) distress alerts
acknowledgements, 3.5--3.6
distress alert relay, 3.8--3.9
distress traffic, 3.7
sending on HF, 3.9--3.10
summary, 3.16--3.18
urgency and safety calls, 3.12
watch-keeping, 3.13--3.15

frequencies
aeronautical, 2.35
designated frequencies, 2.33--2.34
distress, 2.2
handling distress traffic, 2.9
general provisions, 2.1

GMDSS, 1.3, 2.33--2.34, App. 8

homing signals, 2.18

Inmarsat-A, 5.41
Inmarsat-B,

message generator, 5.20
transmission procedure, 5.21

Inmarsat-C, 5.25, 5.26
Inmarsat-M, 5.37

locating signals, 2.18
masters, authority of, 2.1.1

on-scene communications, 2.14--2.16
co-ordinators, duties of, 2.15
introduction, 2.14

SITREPs (Situation Reports), 2.16
use of frequencies, 2.14

operational procedures, 2.39

radio telex, 2.6.2, 6.14

radiotelephony distress calls, format of, 2.2.1
radiotelephony distress messages, format of, 2.2.2
Distress communications—cont.
radio telegraph distress messages, 2.2.3
resumption of normal working, 2.12
satellite service, 2.37
shore-to-ship alert relay, 2.12
silence, 2.11
station not in distress, by
DSC (Digital Selective Calling) relay, 2.4–2.4.1
generally, 2.4–2.4.1
radio telephony relay, 2.4.1
survival craft, 2.38
transmitter tests, 2.8
VHF channel usage, 2.36
watch-keeping arrangements, 2.40
Distress Message Generator (DMG)
Inmarsat-B, 5.20
Distress traffic
distress alerts, 2.10
DSC (Digital Selective Calling) distress alerts, 3.7
Documentation
ITU (International Telecommunications Union) documents, 8.15
Radio Regulations, 8.11–8.12
to be carried on UK ships, 8.12
DSC (Digital Selective Calling) acknowledgement
misuse, 1.13.1
DSC (Digital Selective Calling) distress alerts
acknowledgement, 2.5.3, 3.6
coast stations, by, 3.6
ship stations, by, 3.6
distress alert relay
acknowledgement by ships, 3.9
generally, 3.9
overview, 2.4.1
distress traffic, 3.7
format, 3.5
generally, 3.3–3.4
misuse of acknowledgment, 1.13.1
procedure
GMDSS using DSC and RT on HF, 3.18
GMDSS using DSC and RT on MF, 3.17
ship-to-ship in GMDSS Areas A3 or A4, 3.18,
3.19
using DSC and RT on VHF, 3.16
rebroadcast by coast stations, 3.8
safety calls to "all ships", 3.8, 3.11.1, 3.12
sending on HF, 3.9–3.10
ship stations, acknowledgement by, 3.6
summary, 3.16–3.18
emergency calls to "all ships", 3.8, 3.11, 3.11.1
watch-keeping
dedicated receivers, 3.14
generally, 3.13
UK arrangements, 3.15–3.15.1
DSC (Digital Selective Calling) routine calls
acknowledgement of calls
generally, 3.27
transmission method, 3.28
automatic connection, 3.33
bands between 415 kHz and 525.5 kHz (MF)
call and acknowledgment, 3.22
watch-keeping, 3.22
bands between 1 606.5 kHz and 4 000 kHz
call and acknowledgment, 3.23
watch-keeping, 3.23
bands between 4 000 kHz and 27 500 kHz (HF)
call and acknowledgment, 3.24
watch-keeping, 3.24
DSC (Digital Selective Calling) routine calls—cont.
bands between 156 mHz and 174 mHz (VHF)
call and acknowledgment, 3.25
watch-keeping, 3.25
calling frequencies, 3.25
conditions, 3.20
format, 3.26
high frequency (HF)
call and acknowledgment, 3.24
watch-keeping, 3.24
medium frequency (MF)
call and acknowledgment, 3.22
watch-keeping, 3.22
method, 3.26
Regulations
acknowledgement of calls, 3.27–3.28
method of calling, 3.26
ship-to-shore calls, 3.30
shore-to-ship calls
cost station, by, 3.29
generally, 3.29
testing, 3.33–3.34
European arrangements, 3.34
2 187.5 kHz, on, 3.34
use of frequencies, 3.21–3.25
bands between 1 606.5 kHz and
4 000 kHz, 3.23
HF, 3.24
MF, 3.22
VHF, 3.25
VHF
call and acknowledgment, 3.25
watch-keeping, 3.25
watch-keeping, 3.22–3.26, 3.31
Duplex
radio telephony, 7.4
Duplication of equipment (DOE)
GMDSS, 1.10.2
Duration of working
radio telephony, 7.22
EGNOS (European Geostationary Navigation Overlay System)
electronic position fixing, 11.6.2
Electrical interference
Radio Regulations, 8.38
Electronic Navigational Equipment Maintenance
(ENEM) Certificate
entry requirements, 12.25.1
examination structure, 12.25
generally, 12.25
Electronic position fixing systems, 11.1–11.13
AIRS, 11.12
automatic identification system, 11.11
differential Global positioning system (GPS),
11.6.1
EGNOS (European Geostationary Navigation Overlay System), 11.6.2
Galileo navigation system, 11.4
GLONASS (Global Navigation Satellite System)
augmented, 11.6.2
generally, 11.3
integrated, 11.5
Loran-C, 11.8
Global Positioning System (GPS)
augmented, 11.6.2
differential, 11.6.1
generally, 11.2
integrated, 11.5
Electronic position fixing systems—cont.
Global Positioning System (GPS)—cont.
Loran-C, 11.8
improving accuracy, 11.6–11.6.2
differential Global positioning system (GPS), 11.6.1
EGNOS (European Geostationary Navigation Overlay System), 11.6.2
WAAS (Wide Area Augmentation System), 11.6.2
Loran-C
generally, 11.7
integrated, 11.8
NAVSTAR, 11.2
Racons, 11.10
radar beacons, 11.10
Remarks, 11.10
updating position in GMDSS, 11.1
VHF direction-finding service, 11.9
WAAS (Wide Area Augmentation System), 11.6.2
Emergency lighting for radio equipment, 8.41
Emergency Position Indicating Radiobeacons (EPIRBs), 4.1, 4.9–4.11
accidental activation, 1.13
checks, 4.9
GMDSS, 1.3
guidelines for maintenance, 4.10.1
maintenance, 4.9–4.10.3
further maintenance requirements, 4.10
routine maintenance, 4.9
shore-based providers, guidelines for, 4.10.1
registration, 4.11
routine maintenance and checks, 4.9
ENEM (Electronic Navigational Equipment Maintenance Certificate)
entry requirements, 12.25.1
examination structure, 12.25
detailed syllabus, 12.10
outline syllabus, 12.10
General Operator’s Certificate (GOC), 12.7–12.9
Long Range Certificate, 12.15
Restricted Operator’s Certificate (ROC), 12.11–12.11.1
Short Range Certificate, 12.14.3
Facsimile
Inmarsat, 5.48
False distress alerts, 1.12–1.12.1
DSC (Digital Selective Calling), sent by, 2.13
GMDSS, 2.13
IMO Guidelines, App. 1
misuse of DSC (Digital Selective Calling)
acknowledgement, 1.13.1
operator competency, 1.13.2
reporting procedures, 1.13
Fishing vessels
EPIRBs, 1.5.3
Fishing vessels—cont.
GMDSS, 1.4
meteorological services, 10.7
vessel monitoring system, 9.32
Fleet system
Fleet 33
generally, 5.14
land earth station (LES) access codes, 5.15
Fleet 55
generally, 5.13
land earth station (LES) access codes, 5.15
Fleet 77
distress procedures, 5.12
generally, 5.10
land earth station (LES) access codes, 5.11
Fleetphone system and services, 5.16
Forward Error Correction (FEC)
GMDSS, 1.3
radio telex, acknowledgment of messages, 6.12
operation mode, 6.11
procedure, 6.18.2
Frequencies
distress alerts, aeronautical, 2.35
distress, 2.2, 2.34
GMDSS, 2.33
Inmarsat, 5.3
mobile earth stations, 2.33
radio telex, 6.12, 6.14, 6.15
radiotelephony,
band between 1 605 kHz and 4 000 kHz, 7.14.1
bands between 4 000 kHz and 27 500 kHz, 7.31–7.13.4
bands between 156 MHz and 174 MHz, 7.32–7.32.3
nomenclature, 7.28.1
single-sideband, 7.28.2
Gale warnings
meteorological services, 10.6
Galileo
electronic position fixing, 11.4
General Operator’s Certificate (GOC)
appeals procedure, 12.8.1
detailed syllabus, 12.10
examination structure, 12.8
outline syllabus, 12.10
General radiocommunications, 1.3
Geneva Conventions 1949, 2.22
Global Maritime Distress and Safety System (GMDSS), 1.1–1.13.2
areas
generally, 1.2
shipboard equipment, 1.5
at-sea maintenance of equipment, 1.10.4
availability of equipment
combinations, 1.10.5
duplication, 1.10.2
further requirements, 1.11
requirements, 1.10.1
terminology, 1.9
distress communications
acknowledgement of receipt of alerts, 2.5–2.8
alerting, 2.5.1
charges, 2.19
distress traffic, 2.10
frequencies, 2.2–2.3, App. 8
Global Maritime Distress and Safety System (GMDSS)—cont.
distress communications—cont.
general provisions, 2.1
handling distress traffic, 2.9
homing signals, 2.18
locating signals, 2.18
on-scene communications, 2.14
protection of frequencies, 2.39
resumption of normal working, 2.12
satellite service, 2.37
ship-to-shore alert relay, 2.12
silence, 2.11
station not in distress, by, 2.4–2.4.1
survival craft, 2.38
transmitter tests, 2.8
VHF channel usage, 2.36
watch-keeping arrangements, 2.40
DSC (Digital Selective Calling)
false distress alerts, 2.13
generally, 3.1
duplication of equipment, 1.10.2
false distress alerts, 1.12–1.12.1
misuse of DSC (Digital Selective Calling)
acknowledgement, 1.13.1
operator competency, 1.13.2
reporting procedures, 1.13
fishing vessels, 1.5.3
frequencies, 2.33–2.34, App. 8
IAMSAR Manual, 1.1.2
implementation, 1.4
maintenance of equipment
at sea, 1.10.4
shore-based, 1.10.3
terminology, 1.9
Maritime Rescue Coordinators’ Centre (MRCC),
1.7–1.7.2, 1.9
registration database, 1.7.2
role, 1.7–1.7.2
SARNET, 1.7.1
master plan, 1.8
misuse of DSC (Digital Selective Calling)
acknowledgement, 1.13.1
operator competency, 1.13.2
passenger ships, for, 1.5.2
personnel requirements for ships stations, 1.6
position updating, 1.5.1
registration database, 1.7.2
sea areas, 1.2
Search and Rescue Regions (SRRS), 1.1.1, 1.1.2
ship equipment, 1.7
shore-based maintenance of equipment, 1.10.3
small craft, 1.5.4
SOLAS Convention, 1.1
specific functions, 1.1
terminology, 1.3, 1.9
training, 1.12.1
urgency frequencies, App. 8
watch-keeping arrangements, 2.40
Global navigation satellite system
augmented, 11.6.2
generally, 11.3
Global navigation satellite system—cont.
integrated, 11.5
Loran-C, 11.8
Global positioning system (GPS)
augmented, 11.6.2
differential, 11.6.1
generally, 11.2
integrated, 11.5
Loran-C, 11.8
GLONASS (Global Navigation Satellite System)
augmented, 11.6.2
generally, 11.3
integrated, 11.5
Loran-C, 11.8
GMDSS see Global Maritime Distress and Safety System
GPS (Global positioning system)
augmented, 11.6.2
differential, 11.6.1
generally, 11.2
integrated, 11.5
Loran-C, 11.8
Greetings telex letters
Inmarsat, 5.55
Handheld Iridium telephones
piracy attack alerts, 2.31.4
Handing distress traffic
distress alerts, 2.9
Harbours
radio transmissions, 8.29
Helicopters
medical evaluation, 2.25.2
High frequency (HF)
DSC (Digital Selective Calling) routine calls
call and acknowledgment, 3.24
watch-keeping, 3.24
radiotelephony, 7.31.4
HM warships
communication with merchant ships, 9.33
Homing signals
distress alerts, 2.18
IAMSAR Manual, 1.1.2
IMO Guidance on false distress alerts, App. 1
Initial message
piracy attack alerts, 2.31.7
Inland waterways
radio transmissions, 8.29
Inmarsat
AMVER (Automated Mutual-assistance Vessel Rescue), 5.54
antenna alignment, 5.5
COSPAS-SARSAT (Search and Rescue Satellite System), 4.7
data communications
generally, 5.46
network identification codes, 5.47
distress message generator, 5.20
EPIRB (Emergency Position Indicating Radio Beacon)
accidental activation, 1.13
GMDSS, 1.3
facsimile, 5.48
Fleet 33
generally, 5.14
land earth station (LES) access codes, 5.15
Fleet 55
generally, 5.13
Inmarsat—cont.
Fleet 55—cont.
land earth station (LES) access codes, 5.15
Fleet 77, 5.10–5.12
distress procedures, 5.12
land earth station (LES) access codes, 5.11
Fleet system, 5.10–5.15
Fleet 33, 5.14–5.15
Fleet 55, 5.13
Fleet 77, 5.10–5.12
introduction, 5.9
fleetphone system and services, 5.16
frequencies, 5.3
greetings telex letters, 5.55
Inmarsat-A system, 5.41
Inmarsat-B system, 5.17–5.21
distress message generator, 5.20
distress transmission procedure, 5.21
land earth station (LES) access codes, 5.19
services, 5.18
two-digit codes, 5.40
Inmarsat-C system, 5.22–5.23
communications, 5.30
distress alerting, 5.25
distress priority message, 5.26
land earth station (LES) access codes, 5.24
logging off, 5.29
logging on, 5.28
message addresses, 5.31
mini-C, 5.34
non-delivery notification codes, 5.33
safety codes, 5.27
services, 5.23
two-digit service codes, 5.32
urGENCY codes, 5.27
Inmarsat-F system, 5.40
Inmarsat-M system, 5.35–5.37
distress alerting, 5.37
land earth station (LES) access codes, 5.36
services, 5.35
two-digit codes, 5.40
Inmarsat mini-M system
land earth station (LES) access codes, 5.39
services, 5.38
Iridium satellite system, 5.61–5.63
land earth station access codes
Fleet 33, 5.15
Fleet 55, 5.15
Fleet 77, 5.11
Inmarsat-A, 5.41
Inmarsat-B, 5.19
Inmarsat-C, 5.24
Inmarsat-M, 5.36
Inmarsat mini-M, 5.39
master’s authority, 5.1
medical advice and assistance, 2.26
medical messages, 5.54
MH/ HF equipment, telex calls to ships fitted
with, 5.59
mobile numbers (IMN), 5.6
multiple identity of single mobile earth station
(MES), 5.7
organisation, 5.2
priority indicators, 5.8
radiotelegrams, 5.54
satellite earth stations, 5.4
telegrams, 5.54
telemessages, 5.54

Inmarsat—cont.
telephone calls
another MESA, to, 5.42
charges, 5.45
generally, 5.41
ocean region codes, 5.43
ships fitted with multi-band RT
equipment, 5.44
telex, 5.49–5.55
answerbacks, 5.51
calls to another mobile earth station
(MES), 5.57
dialling, 5.53
greetings letters, 5.55
Inmarsat-A, via, 5.52
Inmarsat-B, via, 5.52
MH/ HF equipment, telex calls to ships fitted
with, 5.59
ocean region codes, 5.58
service fault codes, 5.60
ships fitted with multi-band RT
equipment, 5.60
terminating calls, 5.56
two-digit codes, 5.50
types, 5.2
Inmarsat-A system
antenna alignment, 5.5
land earth station (LES) access codes, 5.41
mobile numbers (IMN), 5.6
Inmarsat-B system, 5.17–5.21
antenna alignment, 5.5
distress message generator, 5.20
distress transmission procedure, 5.21
land earth station (LES) access codes, 5.19
services, 5.18
two-digit codes, 5.40
Inmarsat-C system, 5.22–5.23
communications, 5.30
distress alerting, 5.25
distress priority message, 5.26
land earth station (LES) access codes, 5.24
logging off, 5.29
logging on, 5.28
message addresses, 5.31
mini-C, 5.34
non-delivery notification codes, 5.33
safety codes, 5.27
services, 5.23
two-digit service codes, 5.32
urGENCY codes, 5.27
Inmarsat-F system, 5.40
Inmarsat-M system, 5.35–5.37
distress alerting, 5.37
land earth station (LES) access codes, 5.36
services, 5.35
two-digit codes, 5.40
Inmarsat mini-M system
land earth station (LES) access codes, 5.39
services, 5.38
Iridium satellite system, 5.61–5.63
land earth station access codes
Fleet 33, 5.15
Fleet 55, 5.15
Fleet 77, 5.11
Inmarsat-A, 5.41
Inmarsat-B, 5.19
Inmarsat-C, 5.24
Inmarsat-M, 5.36
Inmarsat mini-M, 5.39
master’s authority, 5.1
medical advice and assistance, 2.26
medical messages, 5.54
MH/ HF equipment, telex calls to ships fitted
with, 5.59
mobile numbers (IMN), 5.6
multiple identity of single mobile earth station
(MES), 5.7
organisation, 5.2
priority indicators, 5.8
radiotelegrams, 5.54
satellite earth stations, 5.4
telegrams, 5.54
telemessages, 5.54

Index

Inmarsat—cont.
telephone calls
another MESA, to, 5.42
charges, 5.45
generally, 5.41
ocean region codes, 5.43
ships fitted with multi-band RT
equipment, 5.44
telex, 5.49–5.55
answerbacks, 5.51
calls to another mobile earth station
(MES), 5.57
dialling, 5.53
greetings letters, 5.55
Inmarsat-A, via, 5.52
Inmarsat-B, via, 5.52
MH/ HF equipment, telex calls to ships fitted
with, 5.59
ocean region codes, 5.58
service fault codes, 5.60
ships fitted with multi-band RT
equipment, 5.60
terminating calls, 5.56
two-digit codes, 5.50
types, 5.2
Inmarsat-A system
antenna alignment, 5.5
land earth station (LES) access codes, 5.41
mobile numbers (IMN), 5.6
Inmarsat-B system, 5.17–5.21
antenna alignment, 5.5
distress message generator, 5.20
distress transmission procedure, 5.21
land earth station (LES) access codes, 5.19
services, 5.18
two-digit codes, 5.40
Inmarsat-C system, 5.22–5.23
communications, 5.30
distress alerting, 5.25
distress priority message, 5.26
land earth station (LES) access codes, 5.24
logging off, 5.29
logging on, 5.28
message addresses, 5.31
mini-C, 5.34
non-delivery notification codes, 5.33
safety codes, 5.27
services, 5.23
two-digit service codes, 5.32
urGENCY codes, 5.27
Inmarsat-F system, 5.40
Inmarsat-M system, 5.35–5.37
distress alerting, 5.37
land earth station (LES) access codes, 5.36
services, 5.35
two-digit codes, 5.40
Inmarsat mini-M system
land earth station (LES) access codes, 5.39
services, 5.38
Iridium satellite system, 5.61–5.63
land earth station access codes
Fleet 33, 5.15
Fleet 55, 5.15
Fleet 77, 5.11
Inmarsat-A, 5.41
Inmarsat-B, 5.19
Inmarsat-C, 5.24
Inmarsat-M, 5.36
Inmarsat mini-M, 5.39
master’s authority, 5.1
medical advice and assistance, 2.26
medical messages, 5.54
MH/ HF equipment, telex calls to ships fitted
with, 5.59
mobile numbers (IMN), 5.6
multiple identity of single mobile earth station
(MES), 5.7
organisation, 5.2
priority indicators, 5.8
radiotelegrams, 5.54
satellite earth stations, 5.4
telegrams, 5.54
telemessages, 5.54
Index

Inmarsat Fleet system—cont.
Inmarsat mini-M system, 5.38–5.39
land earth station (LES) access codes, 5.39
mobile numbers (IMN), 5.6
services, 5.38
Inspection
ship radio and earth stations, 8.10
Installations
general requirements for radio, 8.40
list of MCA authorised persons, App. 12
International call signs, list of, App. 10
International Telecommunications Union ITU) documents, 8.15
MF RT ship-to-shore working channels, list of, App. 13
Inter-ship communications
radio telex, 6.7.3
radiotelephony, 7.30.1
safety of navigation, 2.23
Iridium telephones
piracy attack alerts, 2.31.4
Iridium satellite system
Inmarsat, 5.61–5.63
iridium services, 5.62
OpenPort offers, 5.63
ITU (International Telecommunications Union) documents, 8.15
MF RT ship-to-shore working channels, list of, App. 13
Land earth stations (LES)
acknowledgement of receipt of alerts, 2.7.1
hours of service, 8.32
Inmarsat access codes
Fleet 33, 5.15
Fleet 55, 5.15
Fleet 77, 5.11
Inmarsat-A, 5.41
Inmarsat-B, 5.19
Inmarsat-C, 5.24
Inmarsat-M, 5.36
Inmarsat mini-M, 5.38
Maritime Rescue Coordinators’ Centre (MRCC), 1.9
watch-keeping arrangements, 2.40
Local User Terminal (LUT), 1.9
Locating signals
distress alerts, 2.18
GMDSS, 1.3
Log books
Radio Regulations, 8.17
Logging on/off
Inmarsat-C, 5.28–5.29
Long Range Certificate
appeals procedure, 12.15.2
detailed syllabus, 12.17
examination structure, 12.15
generally, 12.14.1
outline syllabus, 12.16
satellite module, 12.15.1
satellite module syllabus, 12.18
Loran-C, 11.7, 11.8
Maintenance
EPIRB (Emergency Position Indicating Radio Beacon), 4.9–4.10.3
further maintenance requirements, 4.10
routine maintenance, 4.9
shore-based providers, guidelines for, 4.10.1
Maintenance—cont.
GMDSS equipment
at sea, 1.10.4
shore-based, 1.10.3
radiotelephony, 7.23
routine maintenance, 4.9
SART (Search and Rescue Transponders), 4.14
Manual radio telex calling, 6.7–6.7.3
inter-ship communications, 6.7.3
ship-to-shore, 6.7.1
shore-to-ship, 6.7.2
Marine navigational vocabulary
Merchant Shipping Notice M1252, App. 3
Marine telex (NBDP)
and see Telex via Inmarsat
advice codes, 6.22
answerback, 6.17
ARQ mode, 6.18.1
automatic calling procedures
commands, 6.21
ship-to-shore, 6.8.1
shore-to-ship, 6.8.2
avoidance of interference, 6.1
between two stations, 6.3
broadcasts to more than one receiving station, 6.4
charges, 6.23
circuit to coast station, 6.19
commands, 6.21
DIRECT mode, 6.18.4
distress frequencies, 6.14
Forward Error Correction (FEC)
acknowledgment of messages, 6.12
operation mode, 6.11
procedure, 6.18.2
frequencies, 6.12, 6.14–6.15
GMDSS, 1.3
inter-ship communications, 6.7.3
manual calling procedures, 6.7–6.7.3
inter-ship communications, 6.7.3
introduction, 6.7
ship-to-shore, 6.7.1
shore-to-ship, 6.7.2
message format, 6.10
modes of emission
band between 415 kHz and 535 kHz, 6.2.1
band between 1 605 kHz and 4 000 kHz, 6.2.2
band between 4 000 kHz and 27 500 kHz, 6.2.2
operation modes
ARQ (Automatic Reptition Request), 6.18.1
DIRECT, 6.18.4
FEC (Forward Error Correction), 6.18.2
introduction, 6.18
SELFEC (Forward Error Correction), 6.18.3
public correspondence, 6.5
SELCALL (Selective Calling) numbers, 6.6
SELFEC ((Forward Error Correction), 6.18.3
ship-to-shore
automatic calling procedures, 6.8.1
manual calling procedures, 6.7.1
shore-to-ship
automatic calling procedures, 6.8.2
manual calling procedures, 6.7.2
test transmissions, 6.16
traffic lists, 6.20
transmission format, 6.9
Marinecall
meteorological services, 10.8
Maritime radio accounting, 9.17–9.17.2
Accounting Authority Identification Code (AAIC), 9.17.1
provision of AAIC to coast stations, 9.17.2
Maritime and Coastguard Agency (MCA)
authorised persons, list of, App. 12
radio installations, list of authorised persons for,
App. 12
Radio Regulations, 8.5
Maritime Mobile Service
acknowledgement of calls, 3.27–3.28
automatic connection, 3.33
bands between 415 kHz and 526.5 kHz (MF)
call and acknowledgment, 3.22
watch-keeping, 3.22
bands between 1 605 kHz and 4 000 kHz
call and acknowledgment, 3.23
watch-keeping, 3.23
bands between 4 000 kHz and 27 500 kHz (HF)
call and acknowledgment, 3.24
watch-keeping, 3.24
bands between 156 MHz and 174 MHz (VHF)
call and acknowledgment, 3.25
watch-keeping, 3.25
calling frequencies, 3.25
conditions, 3.20
format, 3.26
high frequency (HF)
call and acknowledgment, 3.24
watch-keeping, 3.24
medium frequency (MF)
call and acknowledgment, 3.22
watch-keeping, 3.22
method, 3.26
Regulations
acknowledgement of calls, 3.27–3.28
method of calling, 3.26
ship-to-shore calls, 3.30
shore-to-ship calls by coast station, 3.29
testing, 3.33–3.34
European arrangements, 3.34
2 187.5 kHz, on, 3.34
use of frequencies, 3.21–3.25
bands between 1 605 kHz and 4 000 kHz, 3.23
HF, 3.24
MF, 3.22
VHF, 3.25
very high frequency (VHF)
call and acknowledgment, 3.25
watch-keeping, 3.25
watch-keeping, 3.22–3.26, 3.31
Maritime Mobile Service Identities (MMSIs), 8.14,
8.27
Maritime Rescue Co-ordination Centre (MRCC)
acknowledgement of receipt of alerts, 2.7.1, 4.6
contact details, App. 2
COSPAS-SARSAT (Search and Rescue Satellite System), 1.9
medical evaluation, 2.25.1
meteorological services, 10.5
registration database, 1.7.2
role, 1.9
SARNET, 1.7.1
terminology, 1.3
Maritime safety information (MSI), 4.15–4.17
Enhanced Group Call (EGC), 4.17
GMDSS, 1.3
NAVTEX (Navigation Telex)
Enhanced Group Call (EGC), 4.17
Maritime safety information (MSI)—cont.
NAVTEX (Navigation Telex)—cont.
European service, 4.16
UK waters, in, 4.18
Master plan
GMDSS, 1.8
Master’s authority
distress communications, 2.1.1
Inmarsat, 5.1
Radio Regulations, 8.7
Mayday
and see Distress communications
generally, 2.6.1–2.6.2
Medevac
generally, 2.25
information to Maritime Rescue Coordinators’ Centre (MRCC), 2.25.1
Medical advice
coastguard stations, via, 2.28
generally, 2.24
Inmarsat, via, 2.26
Medical assistance
coastguard stations, via, 2.29
generally, 2.25
Inmarsat, via, 2.27
Medical evacuation
generally, 2.25
helicopters, radio communications with, 2.25.2
information to Maritime Rescue Coordinators’ Centre (MRCC), 2.25.1
Medical messages
Inmarsat, 5.54
Medical transports
definition, 2.22
Geneva Conventions, 2.22
Medium frequency (MF)
DSC (Digital Selective Calling) routine calls
call and acknowledgment, 3.22
watch-keeping, 3.22
inter-ship working frequencies, 7.30.1
ITU (International Telecommunications Union)
MF RT ship-to-shore working channels, list of, App. 13
radiotelephony,
indication of frequency, 7.14.1
inter-ship working frequencies, 7.30.1
mode of emission, 7.30.1, 7.31.1
ship-to-shore working frequencies, 7.30.1
traffic frequencies, 7.17.1
use of 2 182 kHz, 7.1, 7.14.1
working frequencies, 7.14.3
ship-to-shore working frequencies, 7.30.1
traffic frequencies, 7.17.1
watch-keeping, 3.22
Merchant Navy Training Board ETO certificate
proposed syllabus, 12.24
Merchant Shipping Notice M1252
navigational vocabulary, App. 3
Message addresses
Inmarsat-C, 5.31
Metarea 1 broadcasts
meteorological services, 10.4
Meteorological messages
radiotelegram service, 9.22
Meteorological services, 10.1–10.12
BBC, 10.6
EGC (Enhanced Group Call), 10.3
fishing fleets, 10.7
gale warnings, 10.8
Meteorological services—cont.
  Her Majesty's Coastguard (HMG) stations, 10.5
  Marincall, 10.8
  Maritime Rescue Sub-Centres (MRSC), 10.5
  Metarea 1 broadcasts, 10.4
  MetFAX, 10.9–10.9.1
  NAVTEX (Navigational Telex), 10.2
  North Atlantic, 10.4
  reporting information, 10.11
  telex, 10.2
  VOSP, 10.12
  weather routeing services, 10.10
  winter forecasts, 10.7

MetFAX
  meteorological services, 10.9–10.9.1

MIDs
  country list, App. 7

Misuse
  DSC (Digital Selective Calling) distress alerts, 1.13.1

MMSIs (Maritime Mobile Service Identity)
  Radio Regulations, 814, 8.27

Mobile earth station (MES)
  acknowledgement of receipt of alerts, 2.8
  frequencies, 2.33
  watch-keeping arrangements, 2.40

Mobile numbers (IMN)
  Inmarsat, 5.6

Mobile station broadcasts
  Radio Regulations, 8.30

Modes of emission
  Radio Regulations, 8.28
  radio telex,
    band between 415 kHz and 535 kHz, 6.2.1
    band between 1 605 kHz and 4 000 kHz, 6.2.2
    band between 4 000 kHz and 27 500 kHz, 6.2.2
  radiotelephony,
    class, 7.29.1
    MF, 7.30.1
  maritime radio accounting, 9.17–9.17.2
  Accounting Authority Identification Code (AAIC), 9.17.1
  provision of AAIC to coast stations, 9.17.2

Monetary units
  radio traffic, 9.29
  Morse Code
  radio officers, 1.1
  signals and phonetic alphabet, App. 4

Multiple identity of single mobile earth station (MES)
  Inmarsat, 5.7

Narrow Band Direct Printing (NBDP)—cont.
  DIRECT mode, 6.18.4
  distress alerts, 2.5.3
  distress frequencies, 6.14
  Forward Error Correction (FEC)
    acknowledgment of messages, 6.12
    operation mode, 6.11
    procedure, 6.18.2
  frequencies, 6.12, 6.14–6.15
  inter-ship communications, 6.7.3
  manual calling procedures, 6.7–6.7.3
  inter-ship communications, 6.7.3
  ship-to-shore, 6.7.1
  shore-to-ship, 6.7.2
  message format, 6.10

modes of emission
  band between 415 kHz and 535 kHz, 6.2.1
  band between 1 605 kHz and 4 000 kHz, 6.2.2
  band between 4 000 kHz and 27 500 kHz, 6.2.2
  operation modes, 6.18–6.18.4
  ARQ, 6.18.1
  DIRECT, 6.18.4
  FEC, 6.18.2
  SELFEC, 6.18.3
  public correspondence, 6.5
  SELCALL numbers, 6.6
  SELFEC, 6.18.3
  ship-to-shore
    automatic calling procedures, 6.8.1
    manual calling procedures, 6.7.1
  shore-to-ship
    automatic calling procedures, 6.8.2
    manual calling procedures, 6.7.2
  test transmissions, 6.16
  traffic lists, 6.20
  transmission format, 6.9

Navigational Officer on Watch (OW)
  piracy attack alerts, 2.31.1

Navigational vocabulary
  Merchant Shipping Notice M1252, App. 3

NAVSTAR
  electronic position fixing, 11.2

NAVTEX
  EGC (Enhanced Group Call), 4.17
  European service, 4.18
  meteorological services, 10.2

NBDP see Narrow Band Direct Printing (NBDP)

NELS (Northwest European Loran-C System)
  electronic position fixing, 11.7

Neutral ships or aircraft in war zones,
  identification of, 2.30

Non-delivery notification codes
  Inmarsat-C, 5.33

Non-SOLAS vessel radio operators, 12.14–12.14.2

Long Range Certificate
  appeals procedure, 12.15.2
  detailed syllabus, 12.17
  examination structure, 12.15
  outline syllabus, 12.16
  satellite module, 12.15.1
  satellite module syllabus, 12.18


North Atlantic
  meteorological services, 10.4

Northwest European Loran-C System (NELS)
  electronic position fixing, 11.7
<table>
<thead>
<tr>
<th>Topic</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ocean region codes</td>
<td>telephone calls via Inmarsat, 5.43</td>
</tr>
<tr>
<td></td>
<td>telex via Inmarsat, 5.58</td>
</tr>
<tr>
<td>OFCOM</td>
<td>Radio Regulations, 8.4</td>
</tr>
<tr>
<td></td>
<td>Officer on Watch (OOW), piracy alert alerts, 2.31.1</td>
</tr>
<tr>
<td>On-board communications</td>
<td>radiotelephony, 7.25</td>
</tr>
<tr>
<td>On-scene communications</td>
<td>coordinators, duties of, 2.15</td>
</tr>
<tr>
<td></td>
<td>distress alerts</td>
</tr>
<tr>
<td></td>
<td>introduction, 2.14</td>
</tr>
<tr>
<td></td>
<td>SITREPs (Situation Reports), 2.16</td>
</tr>
<tr>
<td></td>
<td>use of frequencies, 2.14</td>
</tr>
<tr>
<td></td>
<td>OFCOM, 1.3</td>
</tr>
<tr>
<td>OpenPort offers</td>
<td>5.63</td>
</tr>
<tr>
<td>Operator certification</td>
<td>additional requirements, 12.5</td>
</tr>
<tr>
<td></td>
<td>AMERC (Association of Marine Electronic and Radio Colleges) address, 12.4</td>
</tr>
<tr>
<td></td>
<td>generally, 12.6</td>
</tr>
<tr>
<td></td>
<td>authority to operate (ATO), 12.21</td>
</tr>
<tr>
<td></td>
<td>competency certificates, 12.4</td>
</tr>
<tr>
<td></td>
<td>condition for issue, 12.3</td>
</tr>
<tr>
<td>Electronic Navigational Equipment Maintenance (ENEM) Certificate, 12.23, 12.25–12.25.1</td>
<td>entry requirements, 12.25.1</td>
</tr>
<tr>
<td></td>
<td>examination structure, 12.25</td>
</tr>
<tr>
<td></td>
<td>examination structure ENEM (Electronic Navigational Equipment Maintenance), 12.25</td>
</tr>
<tr>
<td></td>
<td>examination centres, 12.7.1</td>
</tr>
<tr>
<td></td>
<td>General Operator’s Certificate (GOC), 12.7–12.9</td>
</tr>
<tr>
<td></td>
<td>Long Range Certificate, 12.15</td>
</tr>
<tr>
<td></td>
<td>Restricted Operator’s Certificate (ROC), 12.11–12.11.1</td>
</tr>
<tr>
<td></td>
<td>Short Range Certificate, 12.14.2</td>
</tr>
<tr>
<td>General Operator’s Certificate (GOC)</td>
<td>appeals procedure, 12.8.1</td>
</tr>
<tr>
<td></td>
<td>detailed syllabus, 12.10</td>
</tr>
<tr>
<td></td>
<td>examination structure, 12.8</td>
</tr>
<tr>
<td></td>
<td>outline syllabus, 12.9</td>
</tr>
<tr>
<td></td>
<td>Long Range Certificate, 12.14.1, 12.15–12.15.2</td>
</tr>
<tr>
<td></td>
<td>appeals procedure, 12.15.2</td>
</tr>
<tr>
<td></td>
<td>detailed syllabus, 12.17</td>
</tr>
<tr>
<td></td>
<td>examination structure, 12.15</td>
</tr>
<tr>
<td></td>
<td>outline syllabus, 12.16</td>
</tr>
<tr>
<td></td>
<td>satellite module, 12.15.1</td>
</tr>
<tr>
<td></td>
<td>satellite module syllabus, 12.18</td>
</tr>
<tr>
<td></td>
<td>non-SOLAS vessel radio operators, 12.14–12.18</td>
</tr>
<tr>
<td></td>
<td>Regional Examination Centres, 12.7.1, 12.22–12.22.1</td>
</tr>
<tr>
<td>Restricted Operator’s Certificate, 12.11–12.12</td>
<td>appeals procedure, 12.11.1</td>
</tr>
<tr>
<td></td>
<td>conduct of examination, 12.11.1</td>
</tr>
<tr>
<td></td>
<td>detailed syllabus, 12.13</td>
</tr>
<tr>
<td></td>
<td>outline syllabus, 12.12</td>
</tr>
<tr>
<td></td>
<td>STCW (Standards of Training, Certification and Watch-keeping) endorsement, 12.4</td>
</tr>
<tr>
<td>Operator competency</td>
<td>certification, 12.4</td>
</tr>
<tr>
<td></td>
<td>GMDSS equipment, 1.13.2</td>
</tr>
<tr>
<td>PAN</td>
<td>medical transports, 2.22</td>
</tr>
<tr>
<td></td>
<td>urgency communications, 2.20</td>
</tr>
<tr>
<td>Passenger ships</td>
<td>GMDSS, 1.5.2</td>
</tr>
<tr>
<td></td>
<td>Performance verification test (PVT) distress alerts, 1.13</td>
</tr>
<tr>
<td>Pilot service</td>
<td>radiotelephony, 7.26</td>
</tr>
<tr>
<td></td>
<td>Piracy attack alerts</td>
</tr>
<tr>
<td></td>
<td>after attack reports, 2.31.9</td>
</tr>
<tr>
<td></td>
<td>Automatic Identification System (AIS), 2.31.5</td>
</tr>
<tr>
<td></td>
<td>handheld Iridium telephones, 2.31.4</td>
</tr>
<tr>
<td></td>
<td>increase in attacks, 2.31</td>
</tr>
<tr>
<td></td>
<td>initial message, 2.31.7</td>
</tr>
<tr>
<td></td>
<td>radio personnel, 2.31.1</td>
</tr>
<tr>
<td></td>
<td>radio watch-keeping, 2.31.2</td>
</tr>
<tr>
<td></td>
<td>report, 2.31.7</td>
</tr>
<tr>
<td></td>
<td>Reporting Centre, 2.31.6</td>
</tr>
<tr>
<td></td>
<td>secreted VHF receiver, 2.31.4</td>
</tr>
<tr>
<td></td>
<td>standard message formats, 2.31.3</td>
</tr>
<tr>
<td></td>
<td>suspicious act report, 2.31.8</td>
</tr>
<tr>
<td></td>
<td>Pleasure craft, 1.4</td>
</tr>
<tr>
<td></td>
<td>Port operations</td>
</tr>
<tr>
<td></td>
<td>radiotelephony, 7.27</td>
</tr>
<tr>
<td>Position updating</td>
<td>GMDSS, 1.5.1</td>
</tr>
<tr>
<td></td>
<td>Post restante addresses</td>
</tr>
<tr>
<td></td>
<td>radiotelegram service, 9.13</td>
</tr>
<tr>
<td>Priority indicators</td>
<td>Inmarsat, 5.5</td>
</tr>
<tr>
<td>Portable survival craft</td>
<td>VHF radiotelephones, 4.20</td>
</tr>
<tr>
<td></td>
<td>Preliminary operations</td>
</tr>
<tr>
<td></td>
<td>radiotelephony, 7.6</td>
</tr>
<tr>
<td></td>
<td>Priority of communications</td>
</tr>
<tr>
<td></td>
<td>Radio Regulations, 8.23</td>
</tr>
<tr>
<td></td>
<td>Procedural words, 7.20</td>
</tr>
<tr>
<td></td>
<td>Protection of frequencies</td>
</tr>
<tr>
<td></td>
<td>distress alerts, 2.39</td>
</tr>
<tr>
<td>Public correspondence</td>
<td>radio telex, 6.5</td>
</tr>
<tr>
<td>Racons</td>
<td>electronic position fixing, 11.10</td>
</tr>
<tr>
<td>Radar beacons</td>
<td>electronic position fixing, 11.10</td>
</tr>
<tr>
<td>Radio beacons</td>
<td>electronic position fixing, 11.10</td>
</tr>
<tr>
<td>Radio installations, list of MCA authorised persons</td>
<td>for, App. 12</td>
</tr>
<tr>
<td>Radio personnel</td>
<td>Morse Code, 1.1</td>
</tr>
<tr>
<td></td>
<td>passenger ships, 1.5.2</td>
</tr>
<tr>
<td></td>
<td>piracy attack alerts, 2.31.1</td>
</tr>
<tr>
<td></td>
<td>Radio Regulations, 8.1–8.43</td>
</tr>
<tr>
<td></td>
<td>Admiralty Lists of Radio Signals, 8.13</td>
</tr>
<tr>
<td></td>
<td>amateur radio stations aboard UK ships, 8.31</td>
</tr>
<tr>
<td></td>
<td>apparatus technical requirements, 8.33</td>
</tr>
<tr>
<td></td>
<td>automatic battery chargers, 8.37</td>
</tr>
</tbody>
</table>

Index
Radio Regulations—cont.

avoidance of interference, 8.6

batteries
automatic battery chargers, 8.37
supplies, 8.35
breach, 8.2
call signs, 8.15
classes of emission, 8.28
closure of ship radio stations, 8.24

coast stations
hours of service, 8.32
list, 8.15
control of working, 8.22
coordinated universal time, 8.18
dates used for radiocommunications, 8.18
documentation, 8.11–8.12
electrical interference, 8.38
emergency lighting for radio equipment, 8.41
energy sources, 8.34
harbours, 8.29
hours of service of coast stations and land earth stations, 8.32
identification of stations, 8.25
infringements, 8.5
inland waterways, 8.29
inspection of ship radio and earth stations, 8.10
ITU (International Telecommunications Union) documents, 8.15
land earth stations, hours of service of, 8.32
lighting, 8.41
log books, 8.17
Maritime and Coastguard Agency, 8.5
Master’s authority, 8.7
MMSIs, 8.15, 8.27
M-notices, 8.14
mobile station broadcasts, 8.30
OFCOM, 8.4
order of priority of communications, 8.23
radio installations, general requirements for, 8.40
radio secrecy, 8.8
radio determination stations, 8.15
routine testing of GMDSS equipment, 8.21
selective call numbers, 8.26
servicing radio and associated equipment, 8.43
ship radio licence, 8.9
ship stations
closure, 8.24
identification, 8.25
ITU (International Telecommunications Union) list, 8.15
ships on UK inland waterways, 8.29
sources of energy for equipment, 8.34–8.37
automatic battery charges, 8.37
battery supplies, 8.35
capacity of reserve sources, 8.35
uninterruptible power supplies (UPS), 8.36
spare parts, 8.39
special service stations, 8.15
survey of ship radio and earth stations, 8.10
technical requirements of radio apparatus, 8.33
test transmissions, 8.20
testing of equipment, 8.21
time signals, 8.19
tools, 8.39
uninterruptible power supplies (UPS), 8.36
UTC (Coordinated Universal Time) and dates, 8.18
voluntary radio equipment, 8.42

Radio Regulations—cont.
watch-keeping, 8.16

Radio log books
Radio Regulations, 8.17

Radio secrecy
Radio Regulations, 8.8
Radio telex letters (RTLs), 9.27

Radio traffic, 9.1–9.33
AMVER (Automated Mutual-assistance Vessel Rescue) messages, 9.31
charges for radiotelephone calls
automatic calls, 9.6
operator connected, 9.6.1
refunds, 9.7
special charges, 9.6.2
charges using terrestrial services, 9.5
fishing vessels, 9.32
maritime radio accounting, 9.17–9.17.1
Accounting Authority Identification Code (AAIC), 9.17.1
provision of AAIC to coast stations, 9.17.2
meteorological messages, 9.22
monetary units, 9.29
post restante addresses, 9.13
radio telex letters, 9.27
radiomaritime letters, 9.23
radiotelegram service, 9.8–9.15
acceptable classes, 9.10
addresses, 9.11
cancellation at sender’s request, 9.20
characters, 9.9
charges, 9.5
counting words, 9.15
format, 9.16
generally, 9.8
meteorological messages, 9.22
non-delivery, 9.19
paid service indicators, 9.14
post restante addresses, 9.13
service advices, 9.21
service messages, 9.18
urgency communications, 9.12
radiotelephone calls, 9.1–9.3
automatic service, 9.6
charges, 9.6
credit card, by, 9.2
generally, 9.1
priority, 9.3
radiotelex, 9.25
radiotelexogram, 9.24–9.24.1
information supplied by calling party, 9.24.1
mobile station, from, 9.24.1
mobile station, to, 9.24.1
service advices, 9.21
service messages, 9.18
ship reporting systems, 9.30
telephone credit card calls, 9.2
telex messages, 9.26–9.26.10
 cancellation wording, 9.26.8
error correction, 9.26.7
format, 9.26.2
fractions, 9.26.3
new lines, 9.26.6
non-standardised characters, 9.26.10
percentages, 9.26.4
perforated tapes, 9.26.9
repetition of important groups, 9.26.5
TR information to coast stations, 9.28
vessel monitoring system, 9.32
Radio traffic—cont.
warships, communication with, 9.33
Radio watch-keeping
piracy attack alerts, 2.31.2
Radiocommunication with helicopters
medical evaluation, 2.25.2
Radiodetermination stations
Radio Regulations, 8.15
Radiomaritime letters, 9.23
Radiotelephone service, 9.8-9.16
acceptable classes, 9.10
addresses, 9.11
cancellation at sender’s request, 9.20
characters, 9.9
charges, 9.5
counting words, 9.15
format, 9.16
Inmarsat, 5.54
meteorological messages, 9.22
non-delivery, 9.19
paid service indicators, 9.14
post restante addresses, 9.13
radiotelephony, 7.19
service advices, 9.21
service messages, 9.18
urgency communications, 9.12
Radiotelephone calls, 9.1-9.3
and see Radiotelephony
automatic service, 9.6
automatic calls, 9.6-9.6.2
introduction, 9.6
operator connected, 9.6.1
refunds, 9.6.7
credit card, by, 9.2
priority, 9.3
Radiotelephony (RT)—cont.
frequency bands—cont.
bands between 2 182 kHz, 7.1, 7.14.1
use of 2 182 kHz, 7.1, 7.14.1
working frequencies, 7.14.3
mode of emission, 7.30.1
ship-to-shore working frequencies, 7.14.3
ITU (International Telecommunications Union) MF RT ship-to-shore working channels, list of, App. 13
MF
indication of frequency, 7.14.1
inter-ship working frequencies, 7.14.3
ITU (International Telecommunications Union) MF RT ship-to-shore working channels, list of, App. 13
mode of emission, 7.30.1
ship-to-shore working frequencies, 7.14.3
use of 2 182 kHz, 7.1, 7.14.1
working frequencies, 7.14.3
mode of emission, 7.31.1
on board communications, 7.25
order of working, 7.10
pilot service, 7.26
port operations, 7.27
preliminary operations, 7.6
procedural words, 7.20
radiotelemgrams, 7.19
reception difficulties, 7.16
repetition of calls, 7.11
sending traffic, 7.17
ship movement services, 7.27
ship-to-shore procedures, 7.5
simplex, 7.31.4
generally, 7.12
HF, 7.4.2, 7.13.2
VHF, 7.13.3, 7.32.1
calls
circuit to coast station, 6.19
advise codes, 6.22
answerback, 6.17
ARQ (Automated repetition request)
call and reply, 7.32.1
circuit to coast station, 6.19
advise codes, 6.22
answerback, 6.17
Radiotelex (NBDP)
calls
circuit to coast station, 6.19
advise codes, 6.22
answerback, 6.17
ARQ (Automated repetition request)
call and reply, 7.32.1
communication techniques, 7.32-7.32.3
watch, 7.32.2-7.32.3
working order, 7.10
Index
Index

Radiotelex (NBDP)—cont.
  distress alerts—cont.
    generally, 2.6.2
  distress frequencies, 6.14
  distress messages, 2.2.3
forward error correction (FEC)
  acknowledgment of messages, 6.12
  operation mode, 6.11
  procedure, 6.18.2
frequencies
  distress, 6.14
  generally, 6.12
  protection of, 6.15
  generally, 9.25
GMDSS, 1.3
inter-ship communications, 6.7.3
manual calling procedures, 6.7-6.7.3
  inter-ship communications, 6.7.3
ship-to-shore, 6.7.1
shore-to-ship, 6.7.2
message format, 6.10
modes of emission
  band between 415 kHz and 555 kHz, 6.2.1
  band between 1 605 kHz and 4 000 kHz, 6.2.2
  band between 4 000 kHz and 27 500 kHz, 6.2.2
  operation modes, 6.18-6.12.4
ARQ (Automated repetition request), 6.18.1
DIRECT, 6.18.4
FEC (Forward Error Correction), 6.18.2
SELFEC (Forward Error Correction), 6.18.3
public correspondence, 6.5
SELCALL (Selective calling) numbers, 6.6
SELFEC (Forward Error Correction), 6.18.3
ship-to-shore
  automatic calling procedures, 6.8.1
  manual calling procedures, 6.7.1
shore-to-ship
  automatic calling procedures, 6.8.2
  manual calling procedures, 6.7.2
test transmissions, 6.16
traffic lists, 6.20
transmission format, 6.9
Radiotelexogram, 9.24-9.2.4.1
  information supplied by calling party, 9.24.1
  mobile station, from, 9.24.1
  mobile station, to, 9.24.1
Ramarks
  electronic position fixing, 11.10
Reception difficulties
  radiotelephony, 7.16
Regional Examination Centres, 12.7.1, 12.22-12.22.1
  overseas list, 12.22.1
  UK list, 12.22
Registration database
  GMDSS, 1.7.2
Repetition of calls
  radiotelephony, 7.11
Reporting Centre
  piracy attack alerts, 2.31.6
Rescue Co-ordination Centre (RCC)
  acknowledgement of receipt of alerts, 2.7.1
  contact details, App. 2
COSPAS-SARSAT (Search and Rescue Satellite System), 1.9, 4.6
medical evaluation, 2.25.1
meteorological services, 10.5
registration database, 1.7.2
Rescue Co-ordination Centre (RCC)—cont.
  SARNET, 1.7.1
terminology, 1.3
Restricted Operator’s Certificate, 12.10–12.13
  appeals procedure, 12.11.1
  conduct of examination, 12.11.1
  detailed syllabus, 12.13
  outline syllabus, 12.12
  Resumption of normal working distress alerts, 2.12
Routine DSC (Digital Selective Calling) calls
  acknowledgement of calls, 3.27-3.28
  automatic connection, 3.33
  bands between 415 kHz and 526.5 kHz (MF)
    call and acknowledgment, 3.22
    watch-keeping, 3.22
  bands between 1 605 kHz and 4 000 kHz
    call and acknowledgment, 3.23
    watch-keeping, 3.23
  bands between 4 000 kHz and 27 500 kHz (HF)
    call and acknowledgment, 3.24
    watch-keeping, 3.24
  bands between 156 mHz and 174 mHz (VHF)
    call and acknowledgment, 3.25
    watch-keeping, 3.25
  calling frequencies, 3.25
  conditions, 3.20
  format, 3.26
  high frequency (HF)
    call and acknowledgment, 3.24
    watch-keeping, 3.24
  medium frequency (MF)
    call and acknowledgment, 3.22
    watch-keeping, 3.22
  method, 3.26
  Regulations
    acknowledgement of calls, 3.27–3.28
    method of calling, 3.26
    preparation for exchange of traffic, 3.28
    ship-to-shore calls, 3.30
    shore-to-ship calls by coast station, 3.29
    testing, 3.33–3.34
      European arrangements, 3.34
      use of frequencies, 3.31–3.35
    bands between 1 606.5 kHz and 4 000 kHz, 3.23
  HF, 3.24
  MF, 3.22
  VHF, 3.25
  very high frequency (VHF)
    call and acknowledgment, 3.25
    watch-keeping, 3.25
    watch-keeping, 3.31
Safety communications, 2.20–2.21
  definition, 2.21
  DSC (Digital Selective Calling) distress alerts, 3.8, 3.12–3.12.1
  GMDSS, App. 8
  Inmarsat-B, 5.27
  operational procedures, 2.21
  reception, 3.12.1
Safety related equipment and services
  COSPAS-SARSAT (Search and Rescue Satellite System), 4.2–4.7
  coverage modes, 4.3
  406 MHz beacons, 4.4
  MCCs, 4.6
Safety related equipment and services—cont.
COSPAS-SARSAT (Search and Rescue Satellite System)—cont.
satellite information, 4.7
termination of service on 121.5 MHz, 4.8
EGC (Enhanced Group Call)
generally, 4.17
setting up receiver, 4.17
EPIRBs (Emergency Position Indicating Radio Beacon), 4.1, 4.9, 4.11
checks, 4.9
registration, 4.11
routine maintenance and checks, 4.9
MSI (Maritime Safety Information)
EGC (Enhanced Group Call), 4.17
generally, 4.15
NAVTEX, 4.16
UK waters, in, 4.18
NAVTEX
EGC (Enhanced Group Call), 4.17
European service, 4.16
portable survival craft VHF radiotelephones, 4.20
SART (Search and Rescue Transponders), 4.12–4.12.2
close range signals, 4.12.1
factors increasing visibility, 4.12.2
tests and checks, 4.14
WWNWS, 4.19
SAR (Search and Rescue) coordinating communication, 1.3
SARNET, 1.7.1
SART (Search and Rescue Transponders), 1.3
Satellite communications
AMVER (Automated Mutual-assistance Vessel Rescue), 5.54
antenna alignment, 5.5
COSPAS-SARSAT (Search and Rescue Satellite System), 4.7
data communications, 5.46–5.47
distress message generator, 5.20
EPIRB (Emergency Position Indicating Radio Beacon)
accidental activation, 1.13
GMDSS, 1.3
facsimile, 5.48
Fleet 33, 5.14–5.15
Fleet 55, 5.13, 5.15
Fleet 77, 5.10–5.12
distress procedures, 5.12
land earth station (LES) access codes, 5.11
Fleet system, 5.9–5.15
Fleet 33, 5.14–5.15
Fleet 55, 5.13
Fleet 77, 5.10–5.12
frequencies, 5.3, 5.55
Inmarsat-A system, 5.41
Inmarsat-B system, 5.17–5.21
distress message generator, 5.20
distress transmission procedure, 5.21
land earth station (LES) access codes, 5.19
services, 5.18
Inmarsat-C system, 5.22, 5.24–5.34
communications, 5.30
distress alerting, 5.25
distress priority message, 5.26
land earth station (LES) access codes, 5.24
logging off, 5.29
logging on, 5.28
Satellite communications—cont.
Inmarsat-C system—cont.
message addresses, 5.31
mini-C, 5.34
non-delivery notification codes, 5.33
safety codes, 5.27
services, 5.23
two-digit service codes, 5.32
urgency codes, 5.27
Inmarsat-M system, 5.35–5.37
distress alerting, 5.37
land earth station (LES) access codes, 5.36
services, 5.35
Inmarsat mini-M system, 5.38–5.39
land earth station (LES) access codes, 5.39
services, 5.38
Inmarsat organisation, 5.2
land earth station access codes
Fleet 33, 5.15
Fleet 55, 5.15
Fleet 77, 5.11
Inmarsat-A, 5.41
Inmarsat-B, 5.19
Inmarsat-C, 5.24
Inmarsat-M, 5.36
Inmarsat mini-M, 5.39
Master's authority, 5.1
medical messages, 5.54
mobile numbers (IMN), 5.6
multiple identity of single mobile earth station (MES), 5.7
priority indicators, 5.8
radiotelegrams, 5.54
satellite earth stations, 5.4
telegrams, 5.54
telemessages, 5.54
telephone calls
calls to another mobile earth station (MES), 5.57
dialling, 5.53
greetings letters, 5.55
Inmarsat-A, via, 5.52
Inmarsat-B, via, 5.52
ocean region codes, 5.58
service fault codes, 5.60
ships fitted with multi-band RT equipment, 5.44
telex, 5.49–5.60
answerbacks, 5.51
Inmarsat-A, via, 5.47
Inmarsat-B, via, 5.52
Inmarsat-C, via, 5.60
Inmarsat-M, via, 5.60
Inmarsat mini-M, via, 5.60
terminating calls, 5.56
two-digit codes, 5.50
types, 5.2
satellite earth stations, 5.4
Satellite EPIRB (Emergency Position Indicating Radio Beacon)
accidental activation, 1.13
GMDSS, 1.3
Satellite information
COSPAS-SARSAT (Search and Rescue Satellite System), 4.7
Satellite service, 2.5.2, 2.7.1, 2.37
Sea areas, 1.2
Index

Voluntary Observing Ship Programme (VOSP)
meteorological services, 10.12
Voluntary radio equipment, 8.42

WAAS (Wide Area Augmentation System)
electronic position fixing, 11.6.2
War zones, identification of neutral ships or aircraft in, 2.30
Warships, radiocommunication with, 9.33

Watch-keeping
distress alerts, 2.40
DSC (Digital Selective Calling) distress alerts,
3.1, 3.13–3.15.1
dedicated receivers, 3.14
UK arrangements, 3.15–3.15.1
piracy attack alerts, 2.31.2
Radio Regulations, 8.16
radiotelephony, 7.32.2–7.32.3
Weather services, 10.1–10.11
BBC, 10.6
EGC, 10.8
fishing fleets, 10.7

Weather services—cont.
gale warnings, 10.6
HMCG stations, 10.5
Marinecall, 10.8
Metarea 1 broadcasts, 10.4
MetFAX, 10.9–10.9.1
MRSCs, 10.5
NAVTEX, 10.2
North Atlantic, 10.4
reporting information, 10.11
telex, 10.2
VOSP, 10.12
weather routeing services, 10.10
winter forecasts, 10.7

Websites, list of, App. 9

Wide Area Augmentation Service
electronic position fixing, 11.6.2

Winter forecasts
fishing vessels, 10.7
Working practices
Code of Safe Working Practice (COSWP), App. 11

World Wide Navigational Warning Service
(WWNWS), 4.19