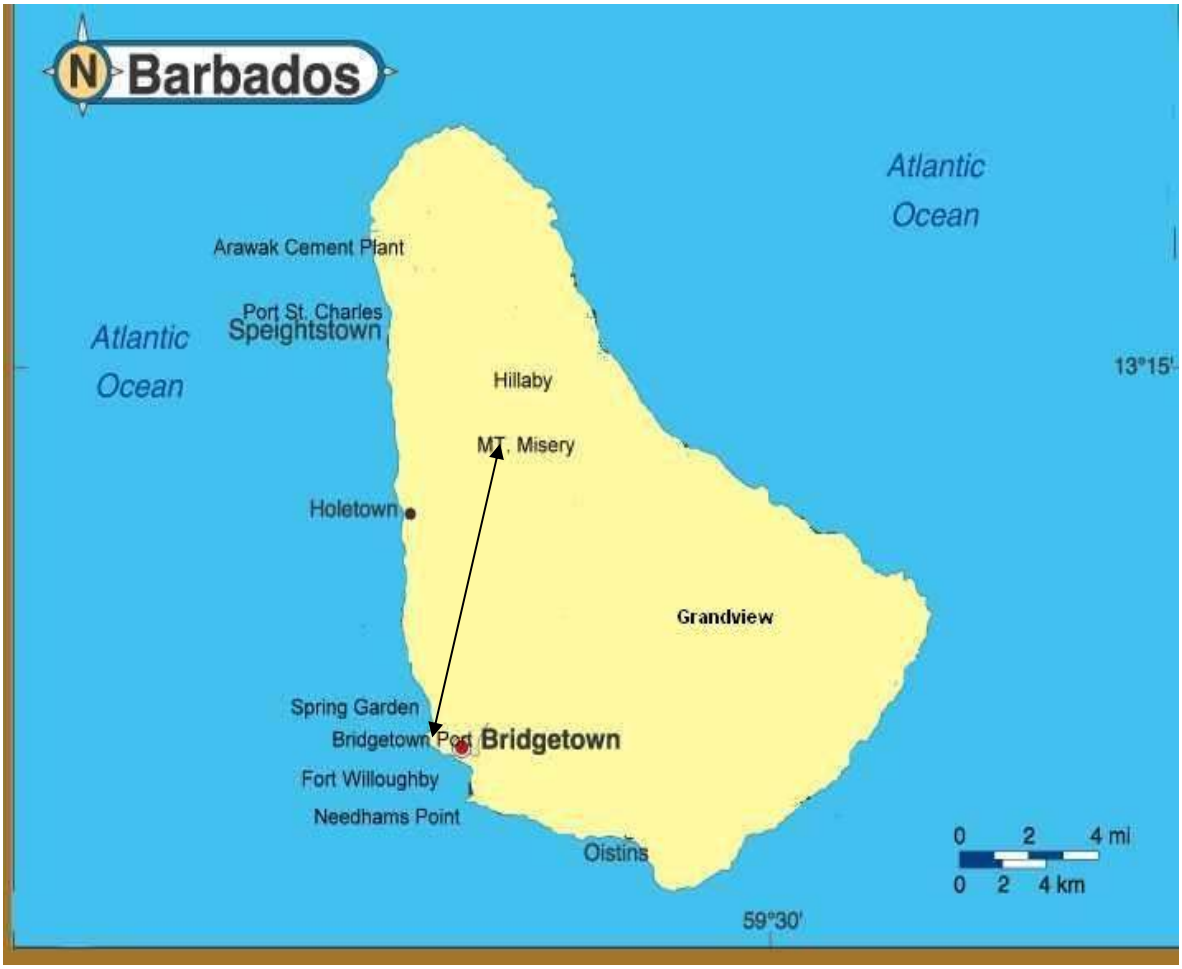
Policy on Global Maritime Distress and Safety System (GMDSS) For Barbados



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INTRODUCTION

Barbados is Party to the International Convention on the Law of the Sea, 1982 (UNCLOS) and is bound to carry out certain obligations under the convention. Under Article 94 of the Convention (Duties of the Flag State), Paragraph 1 states that every State shall effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag. Paragraph 3 (c) states that every State shall take such measures for ships flying its flag as are necessary to ensure safety at sea with regard, inter alia to the use of signals, the maintenance of radio communications and the prevention of collisions.

Barbados is also a Contracting Government to the International Convention for the Safety of Life at Sea, 1974 as amended by Protocol of 1988 better known as SOLAS. This instrument was acceded to on 1st September 1982 and came into force on 1st December 1982. As part of its general obligations under the Convention, Barbados undertakes to give full and complete effect to the relevant provisions by taking all necessary steps to implement a policy on the Global Maritime Distress and Safety Systems (GMDSS).

The International Ship and Port Facility Security Code (ISPS Code) is another mandatory instrument under SOLAS Convention that Barbados has successfully implemented. Much of the radio communications equipment used on ships for the ISPS Code compliance is the same as the GMDSS equipment or it can be integrated. The operational requirements of the radio equipment under both international instruments are designed to be interactive in order to promote a safety and security culture throughout the shipping industry. In this context, the success of the GMDSS policy and its effective implementation will be determined by the competence and commitment of individuals at all levels, particularly those who are tasked with its implementation.

Global Maritime Distress and Safety System (GMDSS)

The GMDSS is an internationally recognized distress and radio communication safety system for ships replacing the previous ship to ship safety system, which relied on a manual Morse Code system on 500 kHz and voice radiotelephony on Channel 16 and 2182 kHz. The GMDSS is an automated ship to shore system using satellites and digital selective calling technology. The GMDSS is mandated for ships internationally by the International Maritime Organization (IMO) Safety of Life at Sea (SOLAS) Convention 1974, as amended in 1988, and carries the force of an International Treaty.

The GMDSS regulations apply to:

- cargo ships of 300 gross tons and over when traveling on international voyages or in the open sea

- all passenger ships carrying more than twelve passengers when traveling on international voyages or in the open sea

Commercial vessels under 300 GT or those above 300 GT engaged on domestic voyages only are subject to the requirements of their Flag State. Vessels to which the GMDSS requirements apply are classified as SOLAS vessels while those to which GMDSS requirements do not apply are considered as non-SOLAS vessels.

The IMO has mandated that from 1 February 1999 all passenger ships and all cargo ships of 300 gross tonnages and upwards on international voyages must comply with the GMDSS.

What are the advantages of the GMDSS over the former system?

1. provides worldwide ship to shore alerting, it is not dependent upon passing ships
2. simplifies radio operations, alerts may be sent by "two simple actions"
3. ensures redundancy of communications, it requires two *separate systems* for alerting
4. enhances search and rescue, operations are coordinated from shore centers
5. minimizes unanticipated emergencies at sea, Maritime Safety Information (MSI) broadcasts are included
6. eliminates reliance on a single person for communications, it requires at least two licensed GMDSS radio operators and typically two maintenance methods to ensure distress communications capability at all times.

GMDSS dictates that the radio communications fitted onboard ships depend on the area of operation of the ship rather than the size.

Because the various radio systems used in the GMDSS have different limitations with regard to range and services provided, GMDSS divides the world's oceans into 4 areas.

- **Sea Area A1** is an area within radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available, nominally in the range of 20 – 30 nautical miles
- **Sea Area A2** is an area, excluding Sea Area 1, within the radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available, nominally in the range of 100-150 nautical miles
- **Sea Area A3** is an area, excluding A1 and A2, within the coverage of an INMARSAT geo-stationary satellite coast station in which continuous alerting is available - approximately 70 degrees north latitude 70 degrees south.
- **Sea Area A4** comprises the remaining sea areas outside A1, A2 and A3 (the polar regions)

Requirements of Ships at Sea

The system identifies nine (9) specific functions every ship must be able to perform while at sea. These are

- Transmission of ship to shore distress alerts by at least two separate and independent means
- Reception of shore to ship distress alerts
- Transmission and reception of ship-to-ship distress alerts
- Transmission and reception of Search and Rescue (SAR) coordinating communications
- Transmission and reception of on-scene communications
- Transmission and reception of locating signals
- Transmission and reception of maritime safety information (MSI)
- Transmission and reception of general radio communications to and from shore based radio systems or networks
- Transmission and reception of bridge to bridge communications

Each ship is also required to carry personnel qualified for distress and safety radiocommunications purposes who are to hold certificates specified in the ITU Radio Regulations as appropriate.

1. HISTORICAL BACKGROUND

Barbados is a stable democratic nation which gained independence from the United Kingdom on November 30, 1966. Barbados, with its relatively flat landmass and arable land, was extremely important to Britain as a sugar producing country and always remained as a colony of Britain until it gained its independence. Sugar continued to be the dominant industry after independence until it was overtaken by Tourism in the early '70's. Further diversification in Barbados' economy continued with the introduction of small manufacturing, offshore banking, oil exploration and exploitation of the marine resources.

1.1 BRIEF DESCRIPTION

Barbados has developed good maritime facilities as a result of its geographical location, trading facilities and tourism. The island's dependence on tourism, trade and fishing justify the need for a modern and highly developed maritime radio communications system.

1.2 GEOGRAPHICAL LOCATION

Barbados is situated at latitude 13 degrees 10 minutes North and Longitude 59 degree 32 minutes west. The island is the most easterly of the Caribbean Islands and is part of the Lesser Antilles chain of

islands which stretch from the Virgin Islands in the North to Trinidad in the South. The island is 21 miles long and 14 miles wide.

1.3 AREA

The total land area is 166 sq. miles or 431sq km. Barbados shares its exclusive economic zone (EEZ) with the other Caribbean islands in the north, south and west but its EEZ can extend up to 200 nautical miles on the eastern side of the island. The territorial sea extends to 12 nautical miles in all directions.

1.4 GEOLOGICAL INFORMATION

The island of Barbados is relatively flat where the land gently rises to the central highland region of the parishes, St. John, St. Joseph and St. Thomas to the highest points of approximately eleven thousand feet at Mt Hillary, St. Thomas. The island is of coral and limestone base.

1.5 MAJOR CITIES

The city of Bridgetown is the island's capital. The other towns are Speightstown in the north of the island, Holetown in the West and Oistin in the South.

1.6 CLIMATE

Barbados has a tropical climate influenced by the cooling northeast Trade winds. It has two seasons namely the dry season which extends from December to May where the temperature averages 30°c and rainfall averages 42 mm per month. June to November is considered to be the rainy season although the temperature varies slightly too average 28°c, there is a marked change in rainfall which averages 142 mm per month. The hurricane season begins on June 1st and is considered to be over on the 30 November. Hurricanes can cause much devastation to the domestic, industrial and maritime sectors but the last major hurricane which caused much damage to these sectors was in September 1955.

1.7 DEMOGRAPHY

The island is divided into eleven parishes. The population of the island is approximately 272,000 (according to the 2004 census) and is concentrated in the parishes of St. Michael and Christ Church in the south, St. James and St. Peter in the west and St. Philip in the east. Bridgetown, the capital city in the parish of St. Michael has approximately 35% of the population.

1.8 MAIN ECONOMIC ACTIVITIES

A per capital income of $16,900 (2004) gives Barbados a high standard of living for a small island state. Historically, the economy was based on the cultivation of sugar cane and related activities. In recent years, however, the economy has diversified into light manufacturing, offshore trading, tourism and component assembly for export.

- Agriculture accounts for 6% of Gross Domestic Product (GDP). Major cash crop is sugar cane; other crops are vegetables and cotton.
- Fishing is an important economic activity. Large-scale commercial fishing is carried out by private companies that operate small and large boats adapted for that purpose. Most of the catch is reserved for local consumption.
- The natural resources include petroleum, fishing and natural gas.

1.9 GROSS DOMESTIC PRODUCT

National Product

Nominal Gross Domestic Product (GDP) at Market Prices:
BDS $ 5,625 Million (2004) and BDS $5,389.7 (2003)
Real Growth Rate: 4.8% (2004), 1.9% (2003)

National product per capita:
Per Capita Income BDS: $16,900 (2004), $15,900 (2003)

1.10 SOURCES OF NATIONAL INCOME

Tourism:

Tourism sector contributed $165.6 million or 16% of the Gross Domestic Product (GDP) in 2004 (*Source- Barbados Economic and Social Report 2004.)*

Exports:
$556.4 million (f.o.b., 2004), $499.4 (f.o.b., 2003)

Commodities:
Sugar and molasses, rum, other food and beverages, petroleum, chemicals, electrical components, and clothing.

1.11 ENERGY

Energy is supplied by diesel, steam and gas turbine generating plant located at Spring Garden, Garrison and Seawell. Most of the electricity is produced from the least expensive residual fuel oil available and customers enjoy the convenience of electricity at rates which are among the lowest in the Caribbean. Electricity is supplied at 50 Hertz. The following services are available: Two wire service at 115volts; Three wire service; 115/230 volt, single phase and 115/200 volts, network, Three Phase four wire; 115/200 volts, 230/400, 115/230-open delta, High Voltage Service; 11,000 volts and 24,900 in some areas The distribution reaches almost 100% of the population. These services are dependable and interruptions are rare.

2.0 MARITIME SECTOR

2.1 MAIN PORTS

The Port of Bridgetown, which is operated by the Barbados Port Inc. is the island's only general cargo port. The only other Port of Entry is the privately owned Port St. Charles Marina, Speightstown.

Oil Berths for Tankers

- Oistin Bay Anchorage
- Spring Garden Anchorage

Bulk Loading Facilities

- Bridgetown Habour
- Arawak Cement Plant

2.2 PORT TRAFFIC

The Barbados Port Inc. offers full services to cargo ship, cruise liners, oil tankers and pleasure crafts. The Port of Bridgetown has six berths including the Shallow Draft which is primarily used for berthing of inter-island vessels, yachts competing in transatlantic races and other pleasure crafts traversing the Atlantic Ocean and Caribbean Sea. The Harbour Master has the responsibility for the control and berthing of vessels at the Port of Bridgetown. The Signal Station controls Port Traffic and full Pilot Service is mandatory for all vessels over 200 net tonnes.

2.3 NATIONAL FISHING FLEET

Barbados has vibrant and sustainable fishing resources, which were exploited from the days of the sailing boats which would venture about 5 miles out to sea to the present-day Long Liners which can go outside of Barbados' Waters and can stay out to sea for periods as long as ten (10) days.

The Barbados Economic and Social Report 2005 classified the Barbados Fishing Fleet by Type as follows:

Moses	477
Launches	242
Ice Boats	173
Long Liners	36
Total Fishing Fleet	**928**

2.4 COASTAL SHIPPING

Barbados has 97 kilometers of coastline. Many pleasure cruisers transport passengers along the coast on day and night excursions. Inter-island vessels traverse the Caribbean Sea transporting goods throughout the islands. These vessels berth at the Bridgetown Port.

The ships registered in Barbados under the small vessels register which include pleasure crafts and other recreational vessels are as follows:

Vessel under ten (10) tonnes: 835
Vessels over ten (10) tonnes: 62

On the register of speedboats, there are 329 speedboats

Barbados has a small but increasing ships registry. The Barbados Maritime Ships Registry (BMSR) has seventy six (76) vessels flying the Barbados Flag.

2.5 WATERWAYS

There are no waterways on the island.

2.6 OTHER INFORMATION

The Government of Barbados, acting in accordance with its international obligation under the SOLAS and in accordance with the International Maritime Organisation (IMO) resolution A.801 (19) intends to implement GMDSS to improve the safety of its fishing fleet and other commercial vessels transporting goods and passengers throughout its exclusive economic zone (EEZ) as well as on international voyages.

Port State Control
Acting in accordance with IMO Resolution A.787 (19) – Procedures for Port State Control as amended by IMO Resolution A.882 (21), the Government of Barbados continues to honour its obligations under the 1996 Caribbean Memorandum of Understanding (CMOU) on Port State Control by inspecting 15% of the foreign ships calling at the Port of Bridgetown to ensure that they are, inter alia, in compliance with the GMDSS requirements.

Ships Flying the Barbados Flag
All ships over 300 gross tonnes that are register under the Barbados' Ships' Registry/Barbados Maritime must comply with the GMDSS requirements. Compliance is verified by the Principal Registrar of Ships who issues the requisite licences on behalf of the Ministry responsible for Telecommunications.

3.0 TELECOMMUNICATIONS SECTOR

3.1 MINISTRY RESPONSIBLE

The Ministry responsible for the telecommunications sector is the Ministry of Economic Affairs and Development. On February 21, 2001, Barbados completed the third and final phase of its transition timetable for the liberalisation of the telecommunications sector. There are a number of licences granted for the operations of telecommunications and radiocommunications in Barbados

3.2 OPERATING AGENCY

The major telecommunications services in the country are provided by:

(a) Cable and Wireless (Barbados) Company Ltd

(b) Digicel (Barbados) Ltd

(c) TeleBarbados

The Minister responsible for Telecommunications regulates all telecommunications matters except Interconnection, Competition, Consumer Protection and Telecommunications Regulated Services (Prices) of Dominant Carriers which are regulated by the Fair Trading Commission.

3.3 TELEPHONY

Licences to provide domestic mobile and international telecommunications services have been granted to Cable and Wireless, Digicel and Sunbeach Communications. Several companies have been granted licences to provide domestic voice and data communications.

TeleBarbados has a domestic and international telecommunications licence.

3.4 DOMESTIC SATELLITE NETWORK

There is no Domestic Satellite Network.

3.5 INTERNATIONAL TRUNK NETWORK

The international trunk network is comprised of the Eastern Caribbean Fibre System (ECFS) which networks most of the English-speaking Caribbean countries between Trinidad and Tobago through to the Cayman Islands with gateways to the U.S.A. and U.K.

Antilles Crossing LP has landed an undersea cable which goes via St. Lucia to Puerto Rico, to the United States of America and the rest of the World. This cable is operational.

3.6 INTERNATIONAL SATELLITE NETWORK

Barbados operates one Intelsat A earth station located at Cable and Wireless, Wildey. This station became commercially operational in 1996. The usual services (telephony, telegraphy, data, facsimile and TV) are provided by these facilities.

There are a number of VSAT's (Very Small Aperture Terminals) operating in Barbados which are mainly used by Internet Service Providers.

3.7 RADIO-RELAY STATIONS

The Mt. Misery remotely operated maritime VHF installation accommodates the VHF equipment. A back up power supply is also available. The towers have enough room for more VHF antennas.

4.0 PRESENT SITUATION OF MARITME RADIOCOMMUNICATIONS

4.1 COAST STATIONS

The coast stations are **BARBADOS COAST GUARD 8PO and 8PZ.**

4.2 SERVICES

- VHF radiotelephony

The services are all manually operated.

There is a VHF installation at Mount Misery, St. Thomas which is remotely operated from the Operation Centre at the Barbados Coast Guard Coast Station.

CLASS OF STATION

- Distress and Safety

INMARSAT

There is no fixed INMARSAT LAND Earth Station in the country. BARBADOS is not a member on INMARSAT

NAVTEX
There is no NAVTEX Service in the country.

COSPAS-SARSAT
Barbados has no Local User Terminal (LUT) of the COSPAS-SARSAT system

4.3 FORMER MARITIME DISTRESS AND SAFETY SYSTEM

- BARBADOS RADIO until recently kept continuous manual watch on the distress frequency 500 KHz and 156.8 MHz. It now keeps watch on Channel (16).
- BRIDGETOWN SIGNAL STATION keeps watch on VHF Channel (12) and (16) and SSB 2182

4.4 FORMER MARITIME DISTRESS AND SAFETY SYSTEMS (GMDSS)

- Barbados has no GMDSS Sea Area A1 OR A2

GEOGRAPHICAL LOCATION

Barbados Coast Guard
HMBS WILLOUGHBY FORT
Bridgetown

Barbados Coast Guard

- Coast station open to distress and safety
- Call sign: 8PO
- Hours of service: 24 hours

Barbados Coast Guard
HMBS WILLOUGHBY FORT
Bridgetown

Barbados Coast Guard

- Coast station open to distress and safety
- Call sign: 8PZ
- Hours of service: 24 hours

5.0 WATCH AND CALLING CHANNELS

5.1 WATCH CHANNEL

Barbados Coast Guard keeps continuous watch on channel 16, VHF

5.2 CALLING CHANNEL

Watch on VHF channels 6, 12, 16 by the VHF.
The watch is 24-hour.

5.3 TRAINING

All technicians and operators are trained by means of suppliers' training courses and on-the-job training courses.

6.0 ORGANIZATION AND MANAGEMENT

6.1 THE ORGANIZATION RESPONSIBLE FOR MARITIME AFFAIRS

The Ministry responsible for shipping is responsible for Maritime Affairs.

6.2 Maritime Communications Regulatory Sector

The Telecommunications Unit of the Ministry Economic Affairs and Development is responsible for regulations and standards for Maritime Communications.

RESPONSIBILITIES OF GOVERNMENT

The Government of Barbados, as a Contracting Party to the SOLAS Convention, has the responsibility of ensuring that both SOLAS and non-SOLAS vessels can safely navigate its coastal waters and that all necessary arrangements are made for the provision of Search and Rescue (SAR) services as obligated under Chapter V of SOLAS.

Shore Based Facilities

Before Barbados can declare compliance with a GMDSS Sea Area, it must have the shore-based facilities operational. The Government of Barbados intends to establish a GMDSS Coast Station (8PO) at the Barbados Coast Guard Coast Station which would be GMDSS Sea Area 1 and Sea Area 2 compliant. The Barbados Coast Guard would operate this Coast Station and would be responsible for all the SAR, MSI, and GMDSS functions. The Government of Barbados would negotiate with the NAVTEX station covering its Sea Area to ensure that Maritime Safety Information (MSI) is available to vessels within its jurisdiction.

Marine Traffic

Marine traffic around Barbados and in the Caribbean is steadily increasing. Search and Rescue facilities must be in place for this increased traffic which consists of Cruise liners, oil tankers, yachts, Inter-island vessels, fishing and recreational Vessels.

GMDSS Equipment

GMDSS equipment falls into six main technological areas:

- RT (VHF, MF, HF) – See Appendix for description
- DSC (VHF, MF, HF) – See Appendix for description
- EPIRBs – See Appendix for description
- NAVTEX – See Appendix for description
- SART RADAR – See Appendix for description
- Satellite communications – See Appendix for description

Regional Cooperation

The Government of Barbados will seek to initiate regional cooperation in Search and Rescue in accordance with the IMO International Convention on Maritime Search and Rescue, 1979.

National Considerations

Most of Barbados' National Fishing fleet and pleasure craft travel within Sea Area 1 and even though the GMDSS does not apply to these vessels it is the policy of the Government of Barbados to mandate that all vessels over six (6) metres in length traveling within Sea Area 1 and Sea Area 2 the requisite equipment be fitted with the requisite equipment.

Barbados has a number of long-line fishing vessels and other recreational craft that may travel outside of Sea Area A1. These vessels are required to have SSB (Single Side Band) Radiotelephone operational.

All SOLAS vessels must comply with the International GMDSS requirements for Sea Area 2. Vessels traveling in Sea Area 2 are allowed to carry Sea Area 3 GMDSS equipment, in conjunction with or as a substitute to MF or HF equipment**.**

It is the responsibility of the Telecommunications Unit to ensure that all EPIRBS, SART and RADAR equipment is registered with the International Telecommunications Union (ITU).

Financial Considerations of the Implementation of GMDSS in Barbados

Shore-based Facilities

The Barbados Defence Force (BDF) through the Barbados Coast Guard is responsible for upgrading Barbados' Radio 8PO to GMDSS Area1 and Area A2 standard in order that Barbados can be Sea Area A1 and A2 compliant.

The BDF is in the process of building a new complex for the Barbados Coast Guard at Spring Garden **.** When completed, the Headquarters of the Barbados Coast Guard will be moved from Willoughby Fort and the new facility will house Barbados Coast Guard Radio 8PZ and GMDSS-compliant Barbados Radio 8PO. The BDF is also acquiring the mandatory VHF DSC, MF/HF DSC, NAVTEX receivers and other equipment applicable to Shore-base facilities for GMDSS compliance for A1/A2 Sea areas. Such equipment will also facilitate the direct receipt of SSAs in the context of the ISPS Code.

Training and Certification in the Operation of the Shore-based Facilities

It is imperative that operators of the shore-based facilities receive instruction on the proper operation of the on-shore equipment whilst having some knowledge of the operation of the on-board GMDSS equipment.

Instruction is currently available through various training institutes in Jamaica, Canada United Kingdom and the United States.

Provision should be made for all shore-based operators to obtain the required GMDSS certification.

GMDSS Coast Radio Station Operator's Course

This course builds on the coast radio station operator's training developed by the UK Maritime and Coastguard Agency to provide the specialized knowledge required by radio operators keeping a watch in a commercial shore-based Coast Radio Station in the GMDSS. It covers the relevant aspects of Coast Radio Station operation, SAR communications and operations, Maritime Safety Information broadcasts, international and national regulations and the essential business aspects of commercial communication services. Students should hold a current GMDSS General Operator's Certificate from an approved source and be fluent in maritime English language before taking this course.

General Operator's Certificate for GMDSS

This course covers the mandatory training requirements for the General Operator's Certificate for GMDSS radio personnel. It is based on the provisions of section A-IV/2 of the STCW Code and derived from IMO Model Course 1.25. The course is approved by the US Coast Guard and currently undergoing approval by the UK Maritime and Coastguard Agency. Successful completion leads to the award of a US Coastguard Certificate of Completion (Proof of Passing Certificate).

Restricted Operator's Certificate for GMDSS

This course covers the mandatory training requirements for the Restricted Operator's Certificate for GMDSS radio personnel. It is especially recommended for personnel operating fishing vessels in inshore waters and voluntary fit vessels such as recreational craft, who may not be subject to the requirements of the STCW Convention. It is based on the provisions of section A-IV/2 of the STCW Code and derived from IMO Model Course 1.26. The course is approved by the US Coast Guard and currently undergoing approval by the UK Maritime and Coastguard Agency. Successful completion leads to the award of a US Coastguard Certificate of Completion (Proof of Passing Certificate).

On-board Facilities

Regulations to be made under the Fisheries Act CAP 391 will require fishing vessels over 6m in length to carry VHF radio which, under the Telecommunication Act Cap 282B, must be registered with the Telecommunications Unit under the Ship Station Regulation and be issued with a call sign. These non-SOLAS vessels which operate in

Sea Area A1 and are commonly called "day boats" will continue to keep an aural watch on channel 16 and continue to use channel 16 for distress. The Barbados Coast Guard and the Barbados Signal Station 8PB will continue to keep a continuous aural watch on the distress channel.

Other non-SOLAS fishing vessels which operate outside of A1 are required under the regulations to be made under the Fisheries Act CAP 391 to have along with the VHF radio, SSB radios, capable of receiving and transmitting on the emergency frequency 2182 kHz. It is proposed that these vessels be fitted with Emergency Position Indicating Radio Beacons (EPIRB). The additional costs of the EPIRB should be considered as part of the radio equipment cost and should attract all the concessions presently approved by the Fisheries Departments.

The training courses which are planned for the operators of fishing vessels should include, along with, the operation of radio equipment, the use and operation of EPIRB's.

On board Facilities for All Other Non-SOLAS Vessel

All other non-SOLAS vessels registered in Barbados must comply with the Regulations made under the Barbados Shipping Act and are required to have a valid Ship Station Licence from Telecommunications Unit. Vessels operating in the Sea Area A1 are required to have a VHF radio and manual watch keeping on the distress channel 16. Vessels travelling outside of Sea Area A1, under the adopted GMDSS Policy for Barbados, as a minimum, must carry SSB radio along with a registered EPIRB. Concessions granted on safety radio equipment would apply to the new purchases of EPIRBs.

The Barbados Policy on GMDSS does not restrict any vessel from surpassing the minimum requirement and using any safety radio equipment that is type-approved by the Telecommunications Unit for use in Barbados.

There will be a minimal cost of providing Maritime Safety Information via the NAVTEX station scheduled to be operational in 2006 by the French Administration in Martinique.

Cost/Benefit Analysis

Implementation of the Barbados Policy on GMDSS would enhance the safety of mariners traversing the Caribbean Sea.

Regular broadcasting of Safety Information via NAVTEX stations could avert potential disasters and play a meaningful role in the safety of seafarers.

The Barbados Coast Guard would be able to better effect Search and Rescue operations by going directly to the Search Area indicated by an activated EPIRB. This would effectively save many man-hours and fuel cost.

Enhance Barbados' image as a GMDSS compliant country and could attract more transatlantic visits to its shores.

Salvage operations would be better facilitated.

APPENDIX

Description of GMDSS Equipment and Definitions

RT

Radiotelephone used for voice communications with other ships or coast stations via radio channels in the MF, HF, or VHF bands.

EPIRBS

Emergency Position Indicating Radio Beacons. The 406 MHz EPIRB was designed to operate with satellites. The signal frequency (406 MHz) has been designated internationally for use only for distress. Other communications and interference, such as on 121.5 MHz, is not allowed on this frequency. Its signal allows a satellite local user terminal to accurately locate the EPRIB (much more accurately – 2 to 5 km vice 25 km – than 121.5/243 MHz devices), and identify the vessel (the signal is encoded with the vessel's identity) anywhere in the world (there is no range limitation). These devices are detectable not only by COSPAS-SARSAT satellites which are polar orbiting, but also by geostationary GOES weather satellites. EPIRBs detected by the GEOSTAR system, consisting of GOES and other geostationary satellites, send rescue authorities an instant alert, but without location information unless the EPIRB is equipped with an integral GPS receiver. EPIRBs detected by COSPAS-SARSAT (e.g TIROS N) satellites provide rescue authorities location of distress, but location and sometimes alerting may be delayed as much an hour or two. These EPIRBs also include a 121.5 MHz homing signal, allowing aircraft and rescue craft to quickly find the vessel in distress. A new type of 406 MHz EPIRB, having an integral GPS navigation receiver, became available in 1998. This EPIRB will send accurate location as well as identification information to rescue authorities immediately upon activation through both geostationary (GEOSAR) and polar orbiting satellites. These types of EPIRB are the best available.

DSC

Digital selective calling (DSC) has been introduced on VHF, MF and HF maritime radios as part of the GMDSS. DSC is primarily intended to initiate ship/ship, ship/shore, and shore/ship radiotelephone and MF/HF radiotelex calls. DSC calls can also be made to individual ships or groups of ships. DSC distress alerts, which consist of a preformatted distress message, are used to initiate emergency communications with ships and rescue coordination centres. The digital calling information is transmitted on specially designated channels, in the case of VHF radio, this is Channel 70. Channel 70 is dedicated for DSC use and must under no circumstances be used for anything else.

Fully implemented, DSC eliminates the need for persons on a ship's bridge or on shore to continuously guard radio receivers on voice radio channels used for distress, safety and calling, including VHF channel 16 (156.8 MHz) and 2182 kHz.

NAVTEX

NAVTEX is an international, automated system for instantly distributing maritime navigational warnings, weather forecasts and warnings, search and rescue notices and similar information to ships. A small, low-cost and self-contained "smart" printing radio receiver installed in the pilot house of a ship or boat checks each incoming message to see if it has been received during an earlier transmission, or if it is of a category of no interest to the ship's master. If it is a new and wanted message, it is printed on a roll of adding-machine size paper; if not, the message is ignored. A new ship coming into the area will receive many previously-broadcast messages for the first time; ships already in the area which had already received the message won't receive it again. No person needs to be present during a broadcast to receive vital information.

Satellite Communications - COSPAS-SARSAT and IMMARSAT

COSPAS-SARSAT is an international satellite-based search and rescue system, established by Canada, France, the U.S.A., and Russia. These four countries jointly helped develop a 406 MHz satellite emergency position-indicating radiobeacon (EPIRB), an element of the GMDSS designed to operate with COSPAS-SARSAT system. These automatic-activating EPIRBs are designed to transmit to a rescue coordination centre a vessel identification and an accurate location of the vessel from anywhere in the world.

INMARSAT

The International Mobile Satellite Organization (INMARSAT), previously the International Maritime Satellite Organization, was established by IMO in 1976 to operate satellite maritime communication systems and has become a privately owned company, while retaining its public sector obligations to the maritime distress and safety system.

Three types of INMARSAT ship earth station terminals are recognized by the GMDSS: the INMARSAT A, B and C. The INMARSAT A and B, an updated version of the A, provide ship/shore, ship/ship and shore/ship telephone, telex and high-speed data services, including a distress priority telephone and telex service to and from rescue coordination centres. The INMARSAT C provides ship/shore, shore/ship and ship/ship store-and-forward data and telex messaging, the capability for sending preformatted distress messages to a rescue coordination centre, and the SafetyNET service. The INMARSAT C Safety NET service is a satellite-based worldwide maritime safety information broadcast service of high seas weather warnings, navigational warnings, radio navigation warnings, ice reports and warnings generated by the International Ice Patrol, and other similar information not provided by NAVTEX. Safety NET works similarly to NAVTEX in areas outside NAVTEX coverage.

Search and Rescue Radar Transponders (SARTs)

The GMDSS installation on ships include one or more search and rescue radar transponders, devices which are used to locate survival craft or distressed vessels by

creating a series of dots on a rescuing ship's 3 cm radar display. The detection range between these devices and ships, dependent upon the height of the ship's radar mast and the height of the SART, is normally less than about ten miles.

Radar

Used for navigating, direction-finding, locating positions, and ship traffic control.

Single sideband Radiotelephone (2-27.5 MHz)

Used to communicate over medium and long distances (hundreds, sometime thousands of nautical miles).