

From the Desk of The Chairman National Maritime Search & Rescue Board



Shipping is the lifeblood of the global economy, transporting approximately **90%** of global trade. There are over 50,000 merchant ships trading internationally and carrying every kind of cargo, so safety of the vessels is critical. The Indian Ocean Region is known to have rich energy resources and minerals. An estimated 55% known oil reserves and 40% of gas reserves are in the Indian Ocean and its ports handle about 30% of global trade and half of the world's container traffic traverse the ocean. Hence, safety and security arrangements are the key enablers to the maritime nation's economic growth, sustainability and prosperity.

India, sitting astride the strategic Shipping Lanes and Lines of Communication in the Indian Ocean, plays a key role in contributing towards fostering and building a safe and secure maritime environment in the region. On the national front, maritime activity is poised to witness rapid ocean-led developments, creation of ancillary facilities, development of cruise tourism, marine exploration and exploitation activities, and promising offshore energy ventures. Considering these ever-increasing maritime activities, maritime safety continuum presents new challenges before us.

The establishment of a comprehensive and efficient system for maritime search and rescue, has always been the most important objective for the Indian Coast Guard, being the primary agency responsible for Maritime Search and Rescue (M-SAR) in the 4.6 million square kilometers vast Indian Search and Rescue Region. Its concerted and collaborative efforts have reinforced the search and rescue construct besides saving 9,099 lives by coordinating 3,228 missions at sea.

Effective coordination and revalidation of established procedures for M-SAR is imperative for an efficient SAR regime. In order to revalidate the extant plans and procedures, the 8th edition of the National Maritime Search and Rescue Exercise (SAREX-18) was conducted from 16-17 Jan 18 off Chennai. It was very encouraging to notice the excellent synergy amongst the resource agencies and the overwhelming participation of national and international observers including the NMSAR Board Members. The lessons learnt and key takeaways are being implemented to further strengthen the national and regional M-SAR construct and response.

Safety of fishermen continues to be an issue of major concern. Notwithstanding the sustained collaborative efforts, issues such as non-availability of requisite lifesaving gears and communication equipment onboard fishing boats continue to pose severe challenges to our endeavors. Active participation by the Fisheries authorities from Maharashtra, Gujarat, Tamil Nadu, Kerala and Goa in the recent NMSAR Board meeting facilitated discussion on fishermen safety issues and way ahead towards improving the safety mechanism. The NMSAR Board has been vigorously pursuing various initiatives for improving safety of fishermen at sea.

Initiatives of Maritime SAR workshops for fisher folks and mariners, enhanced Beacon testing during exercises, growing interactions and SAR Communication exercises with MRCCs of neighboring countries besides SAR training to Maldives & Sri Lanka Coast Guard personnel are testimony to the collaborative approach by Indian Coast Guard towards strengthening of SAR services in the Region. I am confident that the focused approach and unanimous resolve of the NMSAR Board members will definitively ensure collective efforts towards capacity enhancement, so as to keep pace with the growing demands of maritime Search and Rescue in Indian waters....“VAYAM RAKSHAMAH”.

(Rajendra Singh)
Director General, Indian Coast Guard
Chairman
National Maritime Search & Rescue Board

From the Editor's Desk

At the outset, the SAR Secretariat extends sincere gratitude to all the NMSAR Board members and SAR resource agencies for extending their whole hearted support for the successful conduct of 8th National Maritime Search and Rescue Exercise and Workshop off Chennai and overwhelming participation in the M-SAR Workshops & interactive sessions at Thiruvanthapuram, Kolkata & Mumbai.

Dynamic contribution and unwavering cooperation of NMSAR Board members has been a hallmark of synergized approach towards strengthening of India's maritime SAR capabilities in recent years. Prompt coordination and participation with shared concerns have resulted in safety of 470 lives at sea, with an average of 18 lives per week.

Newsletter '**Safe Waters**' has evolved in recent times with addition of various subject matter contents. The SAR Secretariat, CGHQ remains committed to further ameliorate the Newsletter towards a comprehensive read on India's Maritime Search and Rescue activities besides enriching awareness on concurrent global SAR activities. The present edition also includes an article on 'Global Maritime Distress and Safety System' in *Hindi* and the details of SAR Point of Contacts for ISRR.

While thanking all the esteemed NMSAR Board members and stake holders, I look forward for value additions and feedback from the readers towards the innovative contents of newsletter **Safe Waters**. Happy Reading...


(Arun Singh)
Commandant
Joint Director (SAR)

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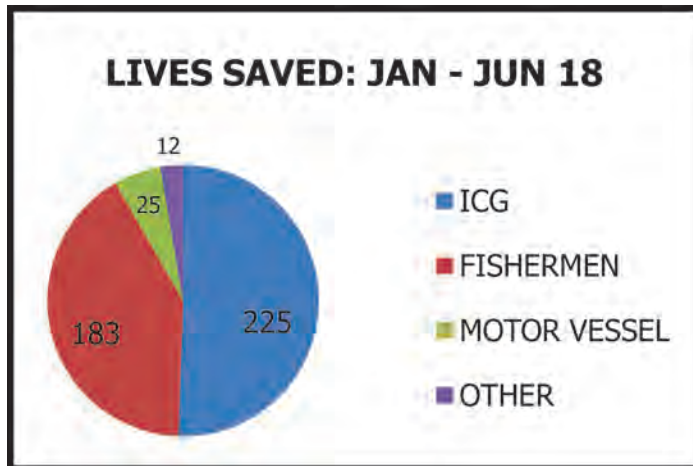
'Safe Waters'

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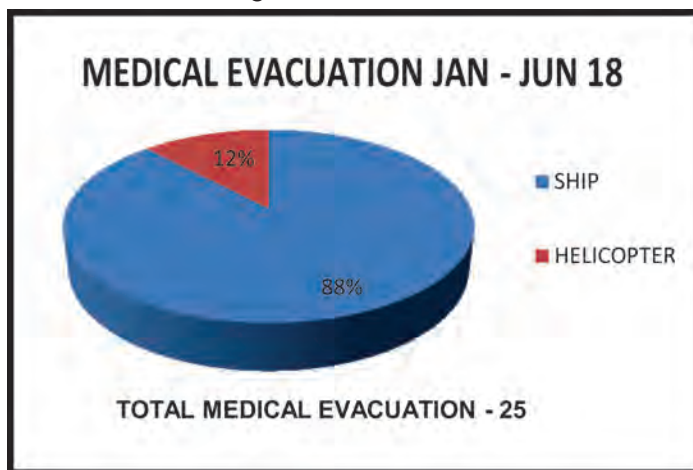
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MARITIME SAR STATISTICS

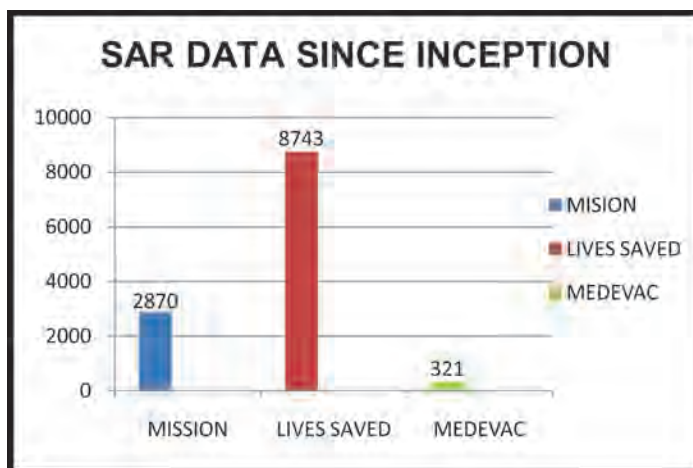
Graph below indicates lives saved by ICG, Fishermen, Motor Vessel and other resource agencies during Jan - Jun 18.



Graph below is the Medical Evacuation Assistance undertaken by Indian Coast Guard ships and aircraft during Jan - Jun 18.



Graph below indicates the SAR Missions, Lives saved and Medical Evacuations by ICG since inception.



MARITIME SAR EVENTS

Beacon Exercise

The Bi-annual Beacon exercises, which gauges the efficacy of SAR response mechanism utilising satellite based Distress Beacons, is regularly conducted in coordination with INMCC, Bangalore and SAR resource agencies. The 14th exercise of the series was conducted on 29-31 May 18, which witnessed active participation from both defence and civil agencies. A total of 37 Beacons were tested live & the Maritime SAR procedure was followed and implemented.

SAR Communication Exercise

With a view to reinforce our operational linkages with leading SAR service providers of the world, besides providing opportunity to MRCC operators to coordinate with other MRCCs/ RCCs, the SAR Communication Exercise (SARCOMEX) were conducted more frequently. During Jan-Jun 18, a total of **12** SARCOMEX with **09** countries were conducted as follows:-

- (a) RCC Muscat (Oman) & MRCC Mumbai on 19 Jan 18
- (b) RCC Bangkok (Thailand) & MRCC Chennai on 23 Jan 18
- (c) MRCC Dhaka (Bangladesh) & MRCC Chennai on 07 Feb 18
- (d) RCC Jakarta (Indonesia) & MRCC Port Blair on 08 Feb 18
- (e) MRCC Putrajaya (Malaysia) & MRCC Port Blair on 07 Mar 18
- (f) JRCC Doha (Qatar) & MRCC Mumbai on 26 Mar 18
- (g) RCC(West) Mokpo (Korea) & MRCC Mumbai on 26 Mar 18

(h) MRCC Vietnam (Vietnam) & MRCC Chennai on 03 Apr 18

(j) MRCC Philippines (Philippines) & MRCC Mumbai 19 Apr 18

(k) RCC Kuala Lumpur (Malaysia) & MRCC Port Blair on 10 May 18

(l) RCC Korea (S. Korea) & MRCC Chennai on 26 Jun 18

(m) RCC Padang (Indonesia) & MRCC Port Blair on 27 Jun 18



Search and Rescue Exercise off Port Blair

Maritime SAR Exercise

With imperatives to validate the National Maritime SAR plan and to exercise the resource agencies for enhanced operability towards collaborative approach for strengthening the SAR mechanism, Maritime Search and Rescue exercises were conducted under the aegis of NMSAR Board. Overwhelming participation of stake holders, resource agencies, national and international observers was witnessed during the exercises. The details of the SAR exercises conducted between **Jan-Jun 18** are as follows:-

(a) **National Maritime Search and Rescue Workshop & Exercise (SAREX-18)** – 16-17 Jan 18 off Chennai.

(b) **Regional Maritime Search and Rescue Exercise** – 19 & 21 Mar 18 off Port Blair.

SAR Workshop

Under the aegis of NMSAR Board, ICG took the initiative of conducting Maritime SAR Workshop & interactive session for mariners, fisherman and stake holders. These initiatives were aimed towards building up a collaborative approach for strengthening safety of fisher-folks and mariners. The under mentioned initiatives were supported by Airport Authority of India, DG Shipping, INMCC, INCOIS and other stake holders:-

(a) Special SAR workshop for Fishermen – 17 Apr 18 at Thiruvananthapuram.



Special SAR Workshop at Thiruvananthapuram

(b) Maritime Search and Rescue Workshop for Mariners - 27 Apr 18 at Kolkata.

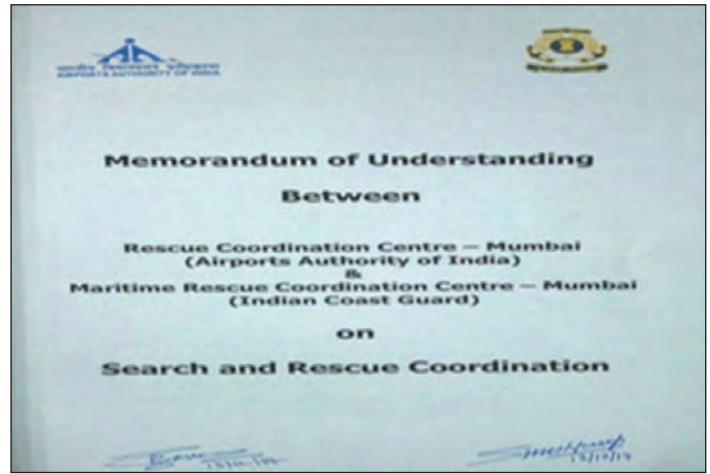


SAREX – 18 off Chennai



Maritime SAR Workshop at Kolkata

(c) Maritime Search and Rescue Workshop for Mariners - 11 May 18 at Mumbai.



MoU between RCC & MRCC, Mumbai

Chennai and, between RCC Kolkata and MRCC Port Blair are in advance stage for finalization.

SAR Training

Indian Coast Guard and Airport Authority of India in coordination with Indian Mission Control Centre (INMCC) has been conducting bi-annual maritime SAR Training capsule for RCC and MRCC operators. The 9th M-SAR training, aimed towards building up of professional knowledge for efficient SAR Coordination was conducted at Maritime Rescue Coordination Centre (MRCC) Chennai on 29-31 May 18. The next M-SAR training capsule course is scheduled at CATC, Allahabad on 16-18 Jul 18.



Maritime SAR Workshop at Mumbai

MoU between MRCC & RCC, Mumbai

A Memorandum of Understanding (MoU) between Regional Coordination Centre (RCC) Mumbai and Maritime Regional Coordination Centre (MRCC) Mumbai was signed on 13 Dec 17. This was aimed to harmonize the Aeronautical & Maritime SAR services and to enhance interoperability besides validating procedures for effective SAR services towards aeronautical contingencies within Mumbai FIR. Similar MoUs, between RCC Chennai & MRCC



M-SAR Training at Chennai - 29-31 May 18

SAR BULLETIN **(Jan 18 - Jun 18)**

Rescue of Children from Capsized Pleasure Boat off Dahanu

On 13 Jan 18, Indian Coast Guard Station (ICGS) Dahanu received information regarding capsizing of a private pleasure boat carrying 35 school children off Parnaka Beach (Dahanu). ICGS Dahanu coordinated the SAR operation with local Administration and in a swift response action, 34 out of 35 students were rescued using local fishing boats. Search and Rescue efforts were augmented by Coast Guard helicopter.



SAR Assistance by ICG Helo off Dahanu

During the third sortie of 13 Jan, the Coast Guard helicopter located the body of the missing student.

Assistance in Search of Missing of Pawan Hans Helicopter off Mumbai

At about 1120 hrs on 13 Jan 18, MRCC Mumbai received information from ONGC office, Mumbai regarding missing of a Pawan Hans Helicopter (Call Sign - VTPWA) in position 33 n miles off Mumbai. The ONGC helicopter was transiting from Juhu to MHN Offshore Platform of the ONGC and had 02 Pilots and 05 Passengers. On receipt of the

information, a large scale search operation code named 'Operation Khoj-01/18' was launched by Indian Coast Guard. Six ICG ships and aircraft participated in the operation. Indian Navy also augmented the search efforts. The coordinated operation resulted in recovery of all the seven bodies and the debris of the crashed aircraft.



SAR Operation of missing crew of Pawan Hans helicopter

Fire Onboard MT Genessa off Kandla

At about 1800 hrs on 17 Jan 18, Deendayal Port, Kandla, Gujarat reported fire onboard MT Genessa (Flag- India) anchored about 14 n mile from Kandla Port. All 26 crew were rescued by Tugs ex-Kandla Port. Two crew with burn injuries were shifted to hospital. However, one crew expired in hospital. Five ICG ships and 12 Tugs ex-Kandla Port were utilised



Fighting onboard MT Genessa by ICGS Samudra Pavak

to extinguish the fire. ICGS Samudra Pavak sprayed 10 KL of AFFF to fight the fire. With sustained efforts of all, the fire was extinguished by 18 Jan 18 and a major catastrophe was prevented.

Assistance to Fishing Boat 'Sea Shell' off Malpe

At about 1830 hrs on 20 Jan 18, Remote Operating Station (ROS), New Mangalore received a distress call from fishing boat 'Sea Shell'. The fishing boat, with 10 crew, was adrift since 20 Jan due to flooding in machinery compartment and multiple machineries failure whilst in position 54 n miles West of Malpe. On receipt of information, ICGS Samar on patrol was diverted for assistance. Extensive search in area was carried out by the ship and the distressed fishing boat was located successfully in position 48 n miles West of Malpe at 2120 hrs on 21 Jan. The technical team of ICGS Samar boarded the vessel for arresting the ingress of water into the boat. Subsequently, the crew was provided necessary assistance and the fishing boat was towed till old Mangalore port and handed over safely to Fisheries Authority, Mangalore at 1245 hrs on 22 Jan 18.



Assistance provided to FB 'Sea Shell' by ICGS Samar

Assistance to Seriously Wounded Patient onboard SLFV 'Geeth Baba 03'



Assistance provided to SLFV 'Geeth Baba 03'

At 1316 hrs on 27 Feb 18, MRCC, Mumbai received an e-mail from MRCC, Colombo regarding seriously wounded fisherman onboard Sri Lankan Fishing Vessel (SLFV) 'Geeth Baba 03' in position 265 Agatti Lt 240 n miles. MRCC, Mumbai issued International Safety Net (ISN) Message for alerting mariners transiting the area. ICGS Samar, on area patrol, was diverted to render assistance. Post rendezvous, the injured fisherman was taken onboard ICGS Samar and provided first aid. Scalp suturing/ stitching under local anaesthesia was carried out. ICGS Samar entered Kochi with injured Sri Lankan fishermen at 1025 hrs on 03 Mar and handed him over to Sri Lankan Consulate representative.

Rescue and Fire Fighting Assistance to MV Maersk Honam

At 2148 hrs on 06 Mar 18, MRCC, Mumbai received relayed message regarding fire onboard container carrier MV Maersk Honam in position 379 n miles West of Agatti Island (about 650 n miles from Kochi). MRCC Mumbai activated International Safety Net (ISN) message for alerting vessels in



Fire Fighting Operation by ICGS Shoor

vicinity to render immediate assistance to the distressed vessel. MV ALS Ceres, MV Seaspan Zambezi and MV Navigator Centauri, transiting through area, were requested for assistance. MV ALS Ceres reported and rescued 23 out of 27 crew from life boats and departed area with rescued crew. ICGS Shoor, on patrol was diverted and arrived in area at 0930 hrs on 08 Mar 18. After initial fire and damage assessment of the container vessel, ICGS Shoor commenced fire fighting operation.

At 0955 hrs on 08 Mar, MV ALS Ceres reported 02 crew critically sick and requested MRCC Mumbai for medical assistance. Consequently, ICGS C-427 was deployed from Vizhinjam with medical team onboard and successfully evacuated 02 sick crew alongwith 01 escort crew (Indian) and brought them to Vizhinjam at 1520 hrs for medical management. MV ALS Ceres arrived off Kochi at 0010 hrs on 09 Mar and disembarked balance 19 survivors and 01 dead body ex- Maersk Honam to Tug Ocean Elite off Kochi. Meanwhile, owner of the distressed vessel also diverted one fire fighting Tug 'CSC Nelson' from Singapore and one salvage Tug MV 'Maersk Involver' from Mumbai for fire fighting on 09 Mar 18. All three vessel undertook boundary/ super structure cooling.

After intensive fire fighting for about 82 hours, the fire was successfully extinguished. Consequent searches onboard MV Mearsk Honam revealed four bodies onboard and ICGS Shoor departed area after successfully fighting the fire and accounting of all crew of ill fated vessel.

Assistance to Fishing Boat 'Sri Padmani Krupa' off Kochi

At about 0730 hrs on 07 Apr 18, Remote Operating Station (ROS), Porbandar received a distress call on VHF regarding flooding onboard 'IFB Sri Padmani Krupa' (GJ-25-MM-0420) with 05 crew onboard in position 63 n miles west of Okha.

ICGS C-413 was deployed from Okha and the boat was located adrift and flooded. The boat was de-flooded by Coast Guard Team and leakage arrested by applying Quick Dry Cement. The boat was later towed by another fishing boat safely under escort to Porbandar on 08 Apr 18.



Timely assistance provided by ICGS C-413 off Okha

Assistance to Fishing Boat 'Krishna Priya' off Kochi

At about 1800 hrs on 24 Apr 18, CGD HQ-12 at Kavaratti in Lakshadweep Islands received an



Towing Assistance to FB 'Krishna Priya' off Kochi

information from Androth Port Control regarding Fishing Boat 'Krishna Priya' alongwith 05 crew, adrift in position 30 n miles North West of Kochi view engine failure. ICGS Abhinav on patrol was diverted and located the fishing boat at 2120 hrs on 26 Apr in position 36 n miles west of Kochi. On locating the boat, ICG ship's technical team embarked the boat to start defective starter motor. However, due to paucity of spares, the repair could not be undertaken. Consequently, the boat was towed by ICGS Abhinav and safely handed over to another fishing boat arranged by Fisheries Department off Kochi on 27 Apr 18.

Rescue of Crew from Tug MV Jalarag off Porbandar

At about 0030 hrs on 13 Jun 18, MRSC Porbandar received VHF message from Tug Jalarag adrift in position 3.4 n miles South East of Porbandar due to total power failure. The tug had lost all available fuel onboard due to crack in the fuel tank pipeline and the Master of vessel had dropped anchor at 0215 hrs. However, due to rough sea conditions, anchor chain cable of the tug parted and vessel started drifting.

ICGS Shoor was deployed from Porbandar at 0245 hrs on 13 Jun for assistance. The ship initially



ICG ALH rescued crew of Tug 'Jalarag' off Porbandar

made all out efforts to connect up the tow, but efforts remained futile due to rough sea conditions, while Tug continuously drifted to shallow waters and finally grounded off Odador beach, Porbandar at 0415 hrs. The master and crew of the tug were advised to observe all safety precautions and be prepared for evacuations.

At about 0600 hrs, Advanced Light Helicopter and Chetak helicopters of Indian Coast Guard were launched for rescue efforts. Five out of seven crew of the stranded vessel were air lifted and shifted ashore while two crew who had jumped in water, were rescued/ assisted by the Coast Guard Diver to reach ashore.

Crew Rescue from MV SSL Kolkata on Major Fire off Sagar Island

At about 2300 hrs on 13 Jun 18, MRCC Chennai received distress message from MV SSL Kolkata in position 55 NM South of Sagar Island regarding major fire onboard and sought for immediate assistance for evacuation of its 22 crew. On receipt of the information, Indian Coast Guard ship Rajkiran was deployed from Haldia at 0120 hrs on 14 Jun for assistance. Two Coast Guard Dornier aircraft from



Fire onboard MV SSL Kolkata

Kolkata were also launched at first light on 14 Jun for sea–air coordinated search and aerial surveillance.

A close communication with the Sagar VTMS, local agent and Master of the vessel was maintained. Due to inclement weather and strong wind conditions, the fire rapidly turned into major fire with intermittent explosion and extended upto more than 40 containers beyond the control of ship’s crew. At about 1025 hrs, the Master of the vessel decided to abandon the vessel by dropping two life rafts. Coast Guard ship Rajkiran, despite inclement weather conditions, braved through rough seas and rescued all 22 crew



ICGS Rajkiran rescued 22 crew ex-SSL Kolkata

by 1400 hrs on 14 Jun in multiple attempts. ICGS Rajkiran thereafter handed over all 22 rescued crew to local agent at Haldia.

[Assistance to Flooding Fishing Boat ‘Palani Murugan’ off Chennai](#)

On 19 Jun 18, ICGS Shaurya, whilst on patrol, received a VHF call from fishing boat ‘Palani Murugan’ alongwith nine crew while experiencing flooding



ICGS Shaurya rescued 09 fishermen off Chennai

in position 98 n miles North East of Chennai. Amidst high wave and strong wind conditions, ICGS Shaurya rushed to area and the ship’s technical team attempted to arrest flooding. However, the flooding was uncontrollable. The fishing boat started sinking and the crew were timely rescued by Coast Guard team. The rescued crew were handed over by ICGS Shaurya to Fisheries Authorities on 19 Jun at Chennai.

[Assistance to Fisherman of Fishing Boat ‘Murali’ off Nagapattinam](#)

At about 1415 hrs on 22 Jun 18, Indian Coast Guard Ship Rani Durgavati, whilst on patrol, sighted two toppled Vallams with five crew in water in position 08 n miles North East of Nagapattinam.



Assistance to fishermen by ICGS 'Rani Durgavati' off Nagapattinam

ICG Ship's team immediately rescued three fishermen including the injured fisherman and provided first aid. The remaining two fishermen were retrieved by the mother boat. The Ship, alongwith three survivors, entered Karaikal at 1830 hrs on 22 Jun and handed over the fishermen to local fishing authorities.

MEDICAL EVACUATION

Medical Evacuation from MV 'Zealand Almere'

On 04 Jan 18, MRCC (Port Blair) received a request from Master of MV 'Zealand Almere' (Flag - Netherlands) for urgent Medical Evacuation of a 40 yrs old Philipino crew, who had a deep cut on left forearm while working onboard. The master of the vessel was directed to proceed with maximum speed to effect rendezvous with ICGS Aruna Asaf Ali for evacuation. At about 2200 hrs on 04 Jan, the injured crew from 'MV Zealand Almere' was safely evacuated by Coast Guard Ship.

The patient was administered first-aid enroute by ship's Medical staff and brought to Campbell Bay at 2320 hrs on 04 Jan 18 for onward transfer to Port Blair by Indian Air Force aircraft.



MEDEVAC by ICGS Aruna Asaf Ali off Campbell bay

Medical Evacuation from MT Asavari

At about 1949 hrs on 02 Feb 18, MRCC, Mumbai received request for medical evacuation of one crew of MT Asavari suffering from severe leg injury (three fingers of left leg cut and detached 75%), whilst in position 21 n miles Northeast of Okha.

ICGS C-411 was deployed with Medical Team and safely evacuated the patient onboard at 2318 hrs. The patient was provided first aid onboard and handed over to the local agent in stable condition for further medical management.



MEDEVAC from MT Asavari off Okha

Medical Evacuation from MV Yanduanjino-I

ICGS Raziya Sultana, whilst on patrol on 03 Feb 18, was directed by MRSC (Haldia) to proceed for medical evacuation of a Chinese national from MV Yanduanjino-I (Flag - Panama). The ship was cruising towards the anchorage area off Sagar Island for assistance. ICG Ship effected rendezvous with the vessel and ship's Medical staff boarded the vessel to provide primary medical aid to the patient. Subsequently, the patient was embarked onboard ICGS Raziya Sultana in critical condition. The patient was kept under continuous medical observation throughout the night and was handed over to Coast Guard high speed boat in wee hours of 04 Feb for transfer ashore.

The injured crew of MV Yanduanjino-I was thereafter handed over to the local agent at Haldia.



Medical Assistance by ICGS Samudra Prahari off Mumbai

stabilised with with partial loss of body response. The fisherman thereafter was handed over to IFB 'Saavdhan' close to Uttan harbour for further treatment.

Medical Evacuation from MT 'Sri Vishnu'

At about 1415 hrs on 07 Jun 18, MRCC (Mumbai) received request from MT Sri Vishnu regarding medical evacuation of a critically injured crew in position off Mumbai outer anchorage. ICGS C-154 was sailed at 1700 hrs on 07 Jun with Medical Officer embarked and the patient was provided medical aid and evacuated. The patient was thereafter safely handed over to local agent at Mumbai for further medical management.



MEDEVAC by ICGS Raziya Sultana off Sagar Island

Medical Assistance to Fisherman of Fishing Boat 'Pavitra Traikya'

At about 1340 hrs on 25 Feb 18, ICGS Samudra Prahari on routine patrol was diverted for medical assistance to fisherman from FB Pavitra Traikya suffering from paralytic attack in position 62 n miles West of Tarapur Lt. Medical care was provided on board Coast Guard ship and the condition of the patient was



MEDEVAC by ICGS C-154 off Mumbai



INTERNATIONAL MARITIME ORGANISATION(IMO) NEWS

Master and Crew of Indian Flag Vessel MV Kodithala Receives ‘Letter of Commendation’ by IMO Council

Under aegis of National Maritime Search and Rescue Board of India, MV Kodithala (c/s AVOG, IMO - 9649744) ex-Lakshadweep Development Corporation Limited was nominated by Indian Coast Guard for **IMO Award for Exceptional Bravery at Sea – 2018**. International Maritime Organisation Council has appreciated the gallant effort of crew of MV Kodithala and conferred ‘**Letter of Commendation**’ for professionalism and exceptional seafaring skills displayed during rescue of 07 crew of MSV Al Noor on 01 Dec 17 during *Severe Cyclone Ockhi*, which impacted southern coast of India in first week of Dec 2017.



MV Kodithala has also been selected to receive SAR award for Government owned Unit 2018 from Director General Rajendra Singh, PTM, TM, Director General, Indian Coast Guard and Chairman of the National Maritime Search and Rescue Board during its annual meeting scheduled in Jul 18.

IAMSAR Manuals Amended.

The Sub-Committee approved updates to the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, which contains detailed guidance for a common aviation and maritime approach to organizing and providing search and rescue services. Draft amendments prepared by the International Civil Aviation Organization (ICAO)/IMO Joint Working Group on the Harmonization of Aeronautical and Maritime Search and Rescue include a new section related to search and rescue operations in areas remote from search and rescue facilities; and updates to the section on mass rescue operations. The draft amendments will be forwarded to the MSC for approval for inclusion in the 2019 edition of the Manual.

GMDSS Modernisation under Progress

The IMO Sub-Committee continued its ongoing work to modernize the Global Maritime Distress and Safety System (GMDSS). The first draft of relevant amendments to Chapters III and IV of the International Convention for the Safety of Life at Sea (SOLAS) were prepared and a work plan for the development of related and consequential amendments to IMO instruments other than the SOLAS Convention was agreed.

The modernization plan aims to update the provisions, including the incorporation of new satellite communication services. A Correspondence Group was re-established to continue the work between sessions.

The Sub-Committee agreed a draft MSC resolution on recognition of Maritime Satellite Services provided by INMARSAT Global Ltd., for adoption by the Committee. The draft resolution recognizes maritime mobile satellite services provided by the INMARSAT Fleet Safety service, in the coverage area under the Inmarsat-4, Middle East and Asia (MEAS) region satellite, use for GMDSS.

HIGHLIGHTS OF 5TH SUB-COMMITTEE ON NAVIGATION, COMMUNICATION AND SEARCH AND RESCUE (NCSR) AT IMO HEADQUARTERS

The Sub-committee on Navigation, Communication and Search and Rescue (NCSR) held its 5th session from 19-23 Feb 18 at IMO headquarters. The session chaired by Mr R Lekeman (Netherlands), was attended by delegates from 78 Member states and Associate Members, representatives from UN Programmes, Specialized agencies and other entities including observers from intergovernmental organisations and non-government organisations. A four member delegation from India including representatives of Indian Coast Guard also attended. SAR officials and experts from 44 Member States inter alia other participants and observers formed the SAR Working group to discuss SAR related issues. Working Groups on Navigation and Communication were also constituted and considered/ deliberated on various Navigation and Communication related developments and submitted the report to the sub-committee for further consideration and approval. Highlights of some of the issues discussed and considered are enumerated in succeeding paragraphs.

Developments in GMDSS Satellite Services

Progress on the MEOSAR programme, information on distress beacon numbers and alerts, and the contribution made by the GMDSS system in saving lives was reviewed. The Cospas-Sarsat Secretariat is upgrading the International 406 MHz Beacon Registration Database IBRD (www.406registration.com) to meet the demands of second generation distress beacons and the Return Link Service (RLS – which provides user the acknowledgement of alert detection and location) and is seeking input from national authorities in regard to the specification of the upgraded IBRD. The individual

national databases operated by the member State Administrations need to be upgraded to meet these demands. Member states are required to upgrade their individual national beacon registration databases accordingly to accommodate the registration requirements for second generation beacons and the RLS, as appropriate. Cospas-Sarsat has also produced a series of short training videos that are publicly available for use by SAR professionals to improve their understanding of the MEOSAR system and second generation beacon technology. (www.youtube.com/user/CospasSarsatProgram/playlists).

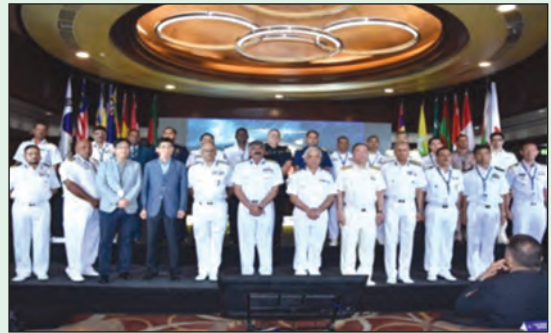
Guidelines on Harmonized Aeronautical & Maritime Search and Rescue Procedures

Flight Safety Hazard with Obstacle Lighting. SAR agencies (Maritime and Aviation) now make frequent use of Night Vision Device (NVD) during training and operation. Some distress alerting devices are equipped with Light Emitting Diode (LED) lights or strobes. There are concerns that LED lights are potentially not detectable on NVD. In such cases, locating persons in distress will be more challenging. States are required to take regulatory action and to raise awareness, as appropriate, with respect to safety hazards caused by LED Obstacle Lighting not being detected by NVD.

SAR Aircraft Flight Management System (FMS).

There are few concerns about FMS used on aircraft for not complying completely with IAMSAR Manual principles and agreed terminology. The lack of an international standard required search plans to be entered into different FMS in different ways causing inefficiency and possibly the risk of errors. It was agreed that detailed set of international standards for search pattern specifications and methods of search pattern performance could be developed taking into account the international SAR standards

GLIMPSES OF MARITIME SEARCH AND RESCUE



8th National Maritime Search and Rescue Workshop at Chennai 16 Jan 18



National Maritime Search and Rescue Sea Exercise off Chennai 17 Jan 18

RESCUE EXERCISES & WORKSHOPS



Regional Level Maritime Search and Rescue Exercise off Port Blair 19-21 Mar 18



Special Search and Rescue Workshop for Fishermen at Triruvananthapuram 17 Apr 18



Maritime Search and Rescue Workshop at Kolkata 27 Apr 18



Maritime Search and Rescue Workshop at Mumbai 11 May 18

to meet international operational needs. Interested Member States and international organizations have been invited to submit proposals on international standards necessary for software used for search patterns in aircraft FMS.

Revised Performance Standards for EPIRBs Operating on 406 Mhz to Include COSPAS-SARSAT MEOSAR and Second Generation Beacons

Requirement for GNSS Positioning. The SAR working group, while discussing on the revised standards for 406 Mhz EPIRB, noted that Global Navigation Satellite System (GNSS) is being considered optional in the Cospas-Sarsat specification and the position update rate, as defined, may not be suitable for use with AIS locating. The Group also noted that GNSS is an essential component, required to provide the position information to the AIS transmission, and provides redundancy to the Cospas-Sarsat position solution by encoding a position in 406 Mhz Distress Alert transmission. The working group unanimously agreed on the benefits of GNSS positioning and its integration with AIS for locating. The matter was recommended for further consideration by the IMO/ICAO Joint Working Group.

Return Link Service (RLS). It was noted that although the beacon specification for the RLS is included in the Cospas-Sarsat specification, it is currently an optional requirement. In order to make RLS mandatory, the Group noted that the compatibility of the serial and MMSI coding requirements of the first generation beacons should be taken into account and directed for further consideration.

Indicators. The Group noted since RLS is a function of a beacon, an Indicator to show when the beacon has received the return link message is desirable. Poor or no positioning will harm the on-scene locating via AIS and loss of RLS may impact the will to survive of the casualty. It was therefore agreed that an Indicator

needs to be provided, in order to inform the user accordingly.

Labeling. Since clear Labeling is essential to aid the proper use of the EPIRB by persons in distress, the SAR Working Group agreed for use of ISO Standard Symbols, where available, and to the need for controls and symbols to be as standard as possible across beacons with a focus on simple and easy operation by the person in distress.

121.5 Mhz Homing Signal Revised Duty Cycle. It was also advocated that completion of testing of 121.5 Mhz homing signal revised duty cycle is very important. Member states needs to be sensitized of the consequential changes and be encouraged to complete their planned testing programmes and submit the results.

<u>Forthcoming SAR Related Meetings at IMO</u>		
SI	Meeting	Date
1.	14 th Meeting of the Joint IMO/ITU Experts Group on Maritime and Radio Communication Matters	03-07 Sep 18
2.	25 th Meeting of the ICAO/IMO Joint Working Group on Search and Rescue	17-21 Sep 18
3.	Sub-Committee on Implementation of IMO Instruments	24-28 Sep 18
4.	IMSO Assembly Meeting	09-12 Oct 18
5.	40 th Consultative Meeting of Contracting Parties	05-09 Nov 18
6.	Maritime Safety Committee (MCC)	03-07 Dec 18
7.	6 th Session of Sub-Committee on Navigation, Communication and Search and Rescue (NCSR)	16-25 Jan 19

MISCELLANEOUS

ICG Participates in Maritime SAR Conference at Helsinki, Finland

ICG delegation participated in the 3rd edition of **Maritime Search and Rescue (SAR) Conference - 2018** conducted at Helsinki, Finland from 22 to 24 May 18. The event was organised by the Finnish Border Guard under the patronage of The Development Network, UK (TDNUK). The theme of the Conference was '**Developing Capabilities for SAR Operations**'. The Maritime SAR Conference-2018, since its launch in 2016, has been an international platform for discussions and innovations, and also provided the world with many state of art equipment, which enhances the scope and level of SAR operations carried out globally. With the participation of approximately 90 delegations from more than 60 countries, including India, and 12 International exhibitors, the Maritime SAR Conference-2018, provided abundant opportunities for participation in professional deliberations and knowledge on hi-tech equipment, concepts, specialized gears designed and aimed towards enhancing safety of mariners at sea including maritime communication, control, UAVs, Surveillance Systems, UAS, specialized safety equipment etc.



Indian Coast Guard ADG VSR Murthy Addressing the participants at the Conference

ICG Participates North Pacific Coast Guard Multi Mission Multi Lateral Exercise - 2018

ICG participated in Multi Mission Multi Lateral Exercise (MMEX) – 2018 conducted under the aegis of North Pacific Coast Guard forum on 07 Jun 18 at Busan, South Korea. The exercise was planned and coordinated by Korea Coast Guard. Coast Guard personnel from Canada, China, Japan, South Korea, Russia and USA, including observers from India, participated in the seminar and sea exercise. A Seminar on Maritime Search and Rescue was also conducted on 06 Jun 18, wherein participating delegation presented papers on mass rescue operation and under water SAR capabilities besides discussion on various mitigating responses during natural and man-made disasters at sea. Coast Guard Ships and Aircraft from Japan, Russia, China and Korea participated in the sea exercise on 07 Jun 18 to demonstrate the collective efforts to strengthen the international corporation towards enhancing maritime safety and security.

The North Pacific Coast Guard forum was initiated in 2000 to foster cooperation through the sharing of information on matters related with combined operations on various maritime safety and security issues besides promoting regional cooperation.



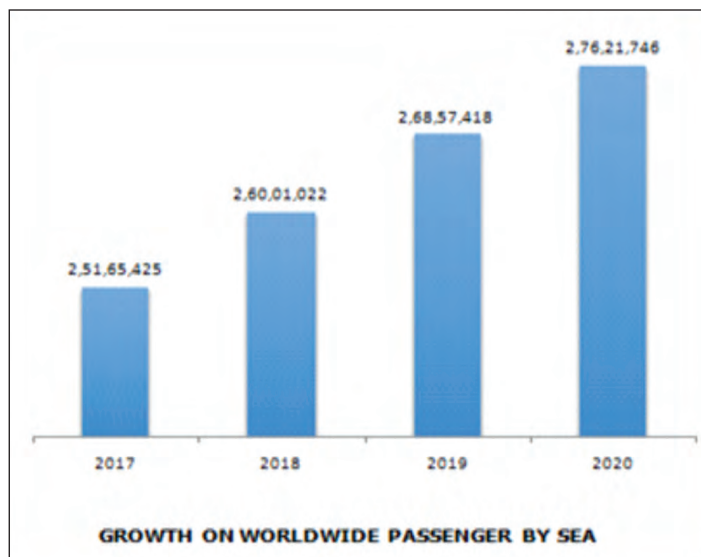
MMEX-18 in Progress

ARTICLES

NATIONAL MARITIME SEARCH AND RESCUE EXERCISE (SAREX-18) OFF CHENNAI, INDIA (16 - 17 JAN 18)

Maritime Shipping Disasters - A Perspective.

On 20 December 1987, a Passenger ferry bound for Manila with more than its capacity of unlisted passengers collided with the oil tanker MT Vector in the Tablas Strait, near Marinduque resulting in fire and sinking with an estimated 4,386 passengers dead. On 14 Apr 1912 passenger liner RMS Titanic, the world's largest ship on her maiden voyage, struck an iceberg, buckling part of her hull and causing her to sink in the early hours of 15 April. More than 1500 passenger died. On 17 December 1991, Cruise Vessel Salem Express, while on a voyage from Jeddah, Saudi Arabia to Safaga, Egypt, with more than 1600 passengers, struck a reef and sank within 10 minutes. On 28 Sep 1994, the passenger ship Estonia sank in heavy seas due to failure of the bow visor door which allowed water from the Baltic Sea to enter the ship and 852 people were lost while only 137 survived. On April 5, 2007, MS Sea Diamond sank with 1,195 passengers on board, after running aground near the Greek island of Santorini the



previous day. In one of the major recent maritime disasters, more than 300 passengers, mostly children, died when a South Korean passenger vessel Sewol sank on 16 Apr 2014 while enroute from Jeju Island to Incheon, South Korea. From 1980 to 2012, about 20 passenger vessels have sunk. Countries implemented rules laying circumstances (carrying capacity, class, route, age of ship and seaworthiness) for the ships to carry emergency equipment (EPIRB & SART) including floating devices such as life jackets and life rafts.

Every year thousands of passengers travel across the oceans by cruise ships. The shipping traffic overseas has increased tremendously and there has been a sharp rise in the number of passengers travelling by ship and the trend is likely to continue. Although, ships are constructed with all laid down standards and certification encompassing safety of passengers & crew onboard, still accidents over sea tend to occur regularly. The major ship accidents necessitate the world's apex body IMO to revisit international standards and recommend enforcement of Global Maritime Distress and Safety System (GMDSS) for ships.

Mass Rescue Operations at Sea. A Mass Rescue Operation (MRO) is one that involves the need for immediate assistance to large numbers of person in distress by pooling of resources from various stakeholders since capabilities normally available to search and rescue (SAR) authorities are inadequate.

MROs are relatively rare compared to normal SAR operations since the nature of such operations may be poorly understood due to limited chances to gain experience with major incidents involving MRO, the sequence of priority in major multi mission incidents must be lifesaving first. Effective responses to MRO incidents typically require immediate, well



Passenger Ship Santa Maria on fire

planned and closely coordinated large scale actions and use of resources from multiple organisations.

Objectives of SAREX-18. Taking into consideration the probability of passenger vessels accidents at sea and the growing imperatives of shipping safety leading to scenario of mass rescue of passengers at sea, the Indian Coast Guard, the apex body for coordinating Maritime Search and Rescue at sea of India, conducted a major Search and Rescue Workshop and Exercise (SAREX-18) off Chennai on 17 Nov 18 simulating a maritime distress situation.

The 8th in series of the exercise was conducted under the aegis of Indian's National Maritime Search and Rescue Board with the participation of National Maritime SAR Board members, International Observers, shipping authorities and other stakeholders.

The primary aim of Maritime SAR exercise was to demonstrate a real time scenario of distress alerting, rescue of passengers at sea and highlight the functioning of M-SAR organisation of Mass Rescue Operation (MRO). An innovative improvised technique was used to develop scene of Cruise vessel with debris, 08 life crafts and about 75 mannequins were deployed simulating as survivors in water. Maritime distress scene was indicated by using pyro-techniques such as orange smoke marker, man overboard marker, hand flare and rocket parachutes to provide realistic impact.

The agencies which actively participated in Workshop and Exercise included Navy, Indian Air Force, DG Shipping, Military, Govt and Private Hospital, ISRO/ INMCC, Bangalore, Dept. of Customs & Immigration, Airport Authority of India, Chennai Port Trust, Kamarajar Port, Mercantile



Lighting the lamp ceremony during workshop



SAR Workshop at Chennai 16 Jan 18

Marine Department, Commissioner of Fisheries, Shipping Corporation of India, TN Home Dept (Disaster Management), Coastal Security Group (TN), AOC Chennai/Air India, Indian Red Cross Society, Port health department CISF, NIOT.

36 national observers from these agencies including NMSAR Board members participated in the Search and Rescue Workshop on 16 Jan 18 and thereafter witnessed the large scale search and rescue exercise at sea on 17 Jan 18.



Participation of foreign observers

A total of 10 ships and 08 aircraft participated as Search and Rescue Units (SRU) and demonstrated various facets of maritime search and rescue.

18 Foreign observers from Australia, Bangladesh, Indonesia, Japan, Madagascar, Maldives, Mauritius, Myanmar, Oman, Qatar, Republic of Korea, Saudi Arabia, Seychelles, Sri Lanka, Thailand and Vietnam witnessed the National Maritime SAR exercise off Chennai. Besides the participation of 18 foreign nationals, a large Japanese delegation led by Commandant, Japan Coast Guard also participated in the sea exercise.

Sea Exercise. The exercise was conducted by Indian Coast Guard Region (East) and reviewed by the Director General Rajendra Singh, PTM, TM, Director General Indian Coast Guard and Chairman of the National Maritime SAR Board.



Aerial SAR demo by Coast Guard helo

Various drills for rescue of survivors at sea were demonstrated in addition to MRO. Aerial SAR demo included dropping of Self Inflatable Life Raft by Coast Guard Dornier aircraft, drill for rescue of survivors by winching by CG Chetak. CG Dornier, Indian Navy Chetak and Indian Air Force MI-17 Helicopters were



Fire fighting demo by ICG ship

also utilised. Surface SAR demo showcased Life Raft embarkation drill, rescue operations drills by various means, recovery of critical causality at sea and transfer of casualties to Hospital ship and shore Hospitals by helicopters and Interceptor Boats.

The major feature of SAREX-18 was the activation of Incident Command System (ICS) which was designed to effectively coordinate rescue operation when multiple organizations are jointly involved for emergency response activity.



Rescue Demo by IAF helicopter

The ICS remain focused on promoting effective overall response without taking over responsibility or authority from SAR services. The ICS proved very useful response for effective coordination for safe transfer of casualties, care for passengers, liaison with medical triage camp, medical management, international and public relations such as notification to next of kin, media briefing, involvement of Immigration/Customs dept etc.

The Medical Triage Camp/ Reception Centers were established at two locations viz., INS Adyar and at West Quay Berth, Chennai Port Trust with the aim to determine the priority of casualty's treatment based



Setting up of Medical Triage camp at ChPT

on the severity of their condition. Triage camp was coordinated by Coast Guard with participation of large number of Doctors from Govt Hospitals, Chennai & Red Cross Society, 50 Paramedic/nursing staff, including 20 Indian Red Cross society Chennai volunteers. The medical casualties transferred from sea to shore via were administered first aid at medical camps and critical casualties were shifted to Govt. hospitals (Rajeev Gandhi Hospital, Kilpauk Medical College Hospital & Royapettah Govt Hospital, Chennai) post evaluating the medical condition of patients.

The participation of all the agencies during Search and Rescue Workshop and the Sea Exercise (SAREX-18) was overwhelming and the opportunity was utilised by all participating agencies to revalidate contingency plan. It was also a mutual learning experience for foreign observers and Maritime SAR board members. All participating agencies were benefited from the well-coordinated Maritime SAR exercise which would ensure coordinated response in case of real maritime accidents.

वैश्विक समुद्री परेशानी और सुरक्षा प्रणाली

द्वारा :- मनोज कुमार, अधिकारी, (02766-क्यू),
एस ए आर सचिवालय,
मुख्यालय भारतीय तटरक्षक

ग्लोबल मैरीटाइम डिस्ट्रेस एंड सेफ्टी सिस्टम (जीएमडीएसएस)

एक अंतरराष्ट्रीय स्तर पर सुरक्षा प्रक्रियाओं, उपकरणों के प्रकार, और संचार प्रोटोकॉल पर सुरक्षा को बढ़ाने के लिए इस्तेमाल किया जाता है और परेशान जहाजों, नौकाओं और विमानों को बचाने में आसान बनाता है। जीएमडीएसएस में कई प्रणालियां शामिल हैं, जिनमें से कुछ नई हैं, लेकिन इनमें से कई कई वर्षों से संचालन में हैं। प्रणाली का उद्देश्य निम्नलिखित कार्यों को करने के लिए है: चेतावनी (संकट में इकाई की स्थिति निर्धारण सहित), खोज और बचाव समन्वय, पता लगाने (गृहस्थ), समुद्री सुरक्षा सूचना प्रसारण, सामान्य संचार, और पुल-टू-ब्रिज संचार। विशिष्ट रेडियो कैरिज आवश्यकताएं जहाजों के संचालन के क्षेत्र पर निर्भर करती हैं, इसके टन के बजाए। यह प्रणाली संकट चेतावनी, और बिजली के आपातकालीन -ोतों के अनावश्यक साधन भी प्रदान करती है।

मनोरंजक जहाजों को जीएमडीएसएस रेडियो कैरिज आवश्यकताओं का अनुपालन करने की आवश्यकता नहीं है, लेकिन डिजिटल सिलेक्टिव कॉलिंग (डीएससी) वीएचएफ रेडियो का तेजी से उपयोग करेंगे। ऑफशोर जहाजों को खुद को आगे बढ़ाने के लिए चुना जा सकता है। 300 सकलटन (जीटी) के तहत वेसल्स जीएमडीएसएस आवश्यकताओं के अधीन नहीं हैं।

19वीं शताब्दी के अंत में रेडियो के आविष्कार के बाद, समुद्र के जहाजों ने शोर मोर्स द्वारा आविष्कार मोर्स को डपर भरोसा किया है और पहली बार संकट और सुरक्षा दूरसंचार के लिए 1844 में इसका इस्तेमाल किया गया था। जहाज और तट रेडियो स्टेशनों की आवश्यकता है और रेडियो टैग्राफ उपकरण का उपयोग करने के लिए, और मोर्स एन्कोडेड संकट कॉल के लिए एक आम रेडियो फ्रीक्वेंसी सुनने के लिए, 1912 में उत्तरी अटलांटिक

में लाइनर आरएमएस टाइटेनिक के डूबने के बाद मान्यता प्राप्त थी। अमेरिकी कांग्रेसने अधिनियमित किया जल्द ही कानून, अमेरिकी जहाजों को संकट कॉल के लिए मोर्सकोड रेडियोटैग्राफ उपकरण का उपयोग करने की आवश्यकता है। अंतराष्ट्रीय दूरसंचार संघ (आईटीयू), जो अब संयुक्त राष्ट्र एजेंसी है, सभी देशों के जहाजों के लिए उपयुक्त है। मोर्स एन्कोडेड संकट कॉलिंग ने लगभग एक शताब्दी पहले अपनी स्थापना के बाद से हजारों लोगों को बचाया है, लेकिन इसके उपयोग के लिए रेडियो परेशानी आवृत्ति सुनने में कई घंटे खर्च करने वाले कुशल रेडियो ऑपरेटर्स की आवश्यकता होती है। मध्यम आवृत्ति (एमएफ) संकट बैंड (500 केएचजेड) पर इसकी सीमा सीमित है, और यातायात की मात्रा मोर्स संकेतों को भी सीमित कर सकते हैं।

NAVTEX

समुद्री सुरक्षा सूचना (एमएसआई) को तत्काल वितरित करने के लिए एक अंतरराष्ट्रीय, स्वचालित प्रणाली है जिसमें नौसैनिक चेतावनी, मौसम पूर्वानुमान और मौसम चेतावनियां, खोज और बचाव नोटिस और जहाजों को समान जानकारी शामिल है। पुल पर एक छोटा, कम लागत वाला और आत्मनिर्भर 'स्मार्ट' प्रिंटिंग रेडियो रिसीवर स्थापित किया गया है, या जिस स्थान से जहाज नेविगेट किया गया है, और प्रत्येक आने वाले संदेश को यह देखने के लिए जांचता है कि यह पहले के संचरण के दौरान प्राप्त हुआ है या नहीं, अगर यह जहाज के मालिक के लिए कोई रूचि नहीं है। जबकि 490 किलो हर्ट्ज को कभी-कभी स्थानीय भाषा में प्रसारित करने के लिए उपयोग किया जाता है। संदेशों को प्रसारण स्टेशनों, संदेशों के प्रकार, और संदेश के क्रम संख्या को इंगित करने वाले दो आंकड़ों के बाद वर्णमाला के एकल अक्षरों का उपयोग करके पहचाने गए हेडर कोड के साथ कोड किया गया है। उदाहरण के लिए : एफए 56 जहां एफ ट्रांसमिटिंग स्टेशन की आईडी है, ए संदेश श्रेणी नेविगेशन चेतावनी को इंगित करता है, और 56 लगातार संदेश संख्या है।

उपग्रह

वर्तमान में, (अप्रैल 2018) जीएमडीएसएस उपग्रह सेवाओं का एक मात्र प्रदाता INMARSAT है। हालांकि इरिडियम / हिब्लियो 2 जीएमडीएसएस सेवा प्रदाता बनने के लिए आवेदन करने की प्रक्रिया में है। थुरया ने यह भी संकेत दिया है कि भविष्य में जीएमडीएसएस सेवा प्रदाता बनने में दिलचस्पी हो सकती है। इंटरनेशनल मोबाइल सैटेलाइट संगठन (आईएमएसओ) द्वारा देखे जाने वाले इंमारसैट कंपनी द्वारा संचालित सैटेलाइट सिस्टम जीएमडीएसएस के महत्वपूर्ण तत्व हैं। जीएमडीएसएस द्वारा मान्यता प्राप्त इंमारसैट जहाज पृथ्वी स्टेशन टर्मिनलों के प्रकार हैं: इंमारसैट सी और एफ 77। इंमारसैट एफ 77, अब अनावश्यक इंमारसैट ए और बी का एक अद्यतन संस्करण, जहाज / किनारे, जहाज / जहाज और किनारे / जहाज टेलीफोन, टेलेक्स और उच्च गति वाली डेटा सेवाएं प्रदान करता है, जिसमें बचाव समन्वय से और परेशानी प्राथमिकता टेलीफोन और टेलेक्स सेवा शामिल है। बेड़े 77 पूरी तरह से वैश्विक समुद्री परेशानी और सुरक्षा प्रणाली (जीएमडीएसएस) का समर्थन करता है और आपातकालीन कॉल प्राथमिकता जैसे उन्नत सुविधाएं शामिल करता है। दुर्भाग्यवश फ्लीट 77 में 1 दिसंबर 2020 के लिए निर्धारित जीवन का अंत है। वर्तमान में कोई निश्चित विकल्प परिभाषित नहीं किया गया है। इंमारसैट सी जहाज / किनारे, किनारे / जहाज और जहाज / जहाज स्टोर-और-आगे डेटा और ईमेल संदेश प्रदान करता है, एक बचाव समन्वय केंद्र में पूर्ववर्ती परेशानी संदेश भेजने की क्षमता, और इंमारसैट सी सुरक्षा नेट सेवा प्रदान करता है। इंमारसैट सी सेफ्टी नेट सेवा एक उपग्रह आधारित दुनिया भर में समुद्री सुरक्षा सूचना प्रसारण सेवा है जो समुद्र के मौसम चेतावनी, NAVAREA नेविगेशन चेतावनी, रेडियो नेविगेशन चेतावनियां, बर्फ रिपोर्ट और यूएससीजी द्वारा आयोजित अंतर्राष्ट्रीय आइस पेट्रोल द्वारा उत्पन्न चेतावनियां, और अन्य समान जानकारी प्रदान नहीं की जाती है। Navtex सुरक्षा एनईटीटीएक्स कवरेज के बाहर के क्षेत्रों में एनएवीटीईएक्स के समान ही काम करता है।

इंमारसैट सी उपकरण अपेक्षाकृत छोटे और हल्के वजन वाले हैं, और एक F77 स्टेशन से बहुत कम लागत है। एक एफ 77 जहाज पृथ्वी स्टेशन के लिए अपेक्षाकृत बड़े जीरो-स्थिरीकृत यूनिडायरेक्शनल एंटेना की आवश्यकता होती है; इंमारसैट सी का एंटीना आकार बहुत छोटा है और सर्वव्यापी है। इंमारसैट सी एक कम बिजली प्रणाली होने के कारण आपातकालीन परिस्थितियों में आपातकालीन 24 वोल्ट बैटरी आपूर्ति जहाजों से अपने ऑपरेशन की अनुमति देता है। यह ओमनी दिशात्मक एंटीना व्यवस्था के साथ 76 डिग्री उत्तर और 76 डिग्री दक्षिण (सागर क्षेत्र ए 3) के बीच एक परेशानी चेतावनी के लिए गारंटी कृत प्रतिक्रिया की अनुमति देता है।

उच्च आवृत्ति

जीएमडीएसएस प्रणाली में डिजिटल सिलेक्टिव कॉलिंग (डीएससी) द्वारा शुरू की गई कॉल के साथ उच्च आवृत्ति (एचएफ) रेडियो टेलीफोन और रेडियोटालेक्स (संकीर्ण बैंड सीधी प्रिंटिंग) उपकरण शामिल हो सकते हैं। समुद्री सुरक्षा सूचना के विश्वव्यापी प्रसारण एचएफ संकीर्ण बैंड प्रत्यक्ष प्रिंटिंग चैनलों पर भी किए जा सकते हैं। सागर क्षेत्र ए 4 में व्यापार करने वाले सभी जहाजों को एचएफडीएससी और एनडीबीपी उपकरण लेना चाहिए जो जहाज आर क्षित उर्जा आपूर्ति (आमतौर पर 24 वी बैटरी आपूर्ति) से संचालित हो सकते हैं। यह एचएफ प्रावधान आवश्यक है क्योंकि इंमारसैट कवरेज ध्रुवीय क्षेत्रों तक नहीं बढ़ता है।

खोज और बचाव उपकरण ढूंढना

जहाजों पर जीएमडीएसएस स्थापना में एक (दो जीटी से अधिक जहाजों पर दो) खोज-बचाव-बचाव उपकरण खोज और बचाव रडार ट्रांसपोंडर (एसएआरटी) कहा जाता है जिसका उपयोग जीवित शिल्पया परेशान जहाजों का पता लगाने के लिए किया जाता है, जो बारह बिंदुओं की श्रृंखला बनाते हैं। जहाज के 3 सेमीरडारडिस्प्ले को बचा रहा है। इन उपकरणों और जहाजों के बीच पहचान सीमा, जहाज के रडार मास्ट की ऊंचाई और

खोज और बचाव स्थान की उंचाई की उंचाई पर निर्भर करता है, आमतौर पर लगभग 15 किमी (8 समुद्री मील) होता है। एक बार रडार द्वारा पता चला, खोज और बचाव स्थान डिवाइस संकट में व्यक्तियों के लिए एक दृश्य और आभासी संकेत उत्पन्न करेगा।

डिजिटल चुनिंदा कॉलिंग

आईएमओ ने जीएमडीएसएस प्रणाली के हिस्से के रूप में एमएफ, एचएफ और वीएचएफ समुद्री रेडियो पर डिजिटल चुनिंदा कॉलिंग (डीएससी) भी पेश किया। डीएससी मुख्य रूप से शिप-टू-शिप, शिप-टू-किनारे और तट-से-जहाज रेडियो टेलिफोन और एमएफ / एचएफ रेडियो टेक्लेक्स कॉल शुरू करने का इरादा रखता है। अलग-अलग स्टेशनों, स्टेशनों के समूह, या किसी के रेडियो रेंज में 'सभी स्टेशनों' को डीएससी कॉल भी किया जा सकता है। प्रत्येक डीएससी-सुसज्जित जहाज, किनारे स्टेशन और समूह को एक अद्वितीय 9-अंकों की समुद्री मोबाइल सेवा पहचान असाइन की जाती है।

डीएससी संकट अलर्ट, जिसमें प्री फॉर्मेटेड संकट संदेश शामिल है, का उपयोग जहाजों और बचाव समन्वय केंद्रों के साथ आपातकालीन संचार शुरू करने के लिए किया जाता है। डीएससी का उद्देश्य जहाज के पुल पर या किनारे पर लोगों के लिए वॉयस रेडियो चैनलों पर लगातार रेडियो रिसीवर की रक्षा करने के लिए किया गया था, जिसमें वीएचएफ चैनल 16 (156.8 मेगाहर्ट्ज) और 2182 के एचजेड शामिल हैं जो अब संकट, सुरक्षा और कॉलिंग के लिए उपयोग किए जाते हैं। 2182 के एचजेड पर जीएमडीएसएस से सुसज्जित जहाजों पर एक सुनवाई घड़ी 1 फरवरी 1999 को समाप्त हुई। मई 2002 में, आईएमओ ने जहाजों पर एक वीएचएफ सुनने की घड़ी को समाप्त करने का फैसला किया। उस वॉचकीपिंग आवश्यकता को 1 फरवरी, 2005 को समाप्त होने के लिए निर्धारित किया गया था।

आईएमओ और आईटीयू दोनों की आवश्यकता है कि डीएससी से सुसज्जित एमएफ / एचएफ और वीएचएफ रेडियो

बाहरी उपग्रह नेविगेशन रिसीवर (जीपीएस) से जुड़े हों। यह कनेक्शन सुनिश्चित करेगा कि यदि कोई परेशानी चेतावनी प्रसारित की जाती है तो सटीक स्थान जानकारी को बचाव समन्वय केंद्र में भेजा जाता है। एफसीसी की आवश्यकता है कि जून 1999 के बाद स्वीकार किए गए सभी नए वीएचएफ और एमएफ / एचएफ समुद्री रेडियो टेलिफोन प्रकार में कम से कम एक बुनियादी डीएससी क्षमता हो।

वीएचएफ डिजिटल सिलेक्टिव कॉलिंग में जीएमडीएसएस के लिए आवश्यक अन्य क्षमताओं की भी अन्य क्षमताएं हैं। अमेरिकी तटरक्षक प्रिंस विलियम साउंड, अलास्का, वेसेल ट्रैफिक सेवा में जहाजों को ट्रैक करने के लिए इस प्रणाली का उपयोग करता है। आईएमओ और यूएस सीजी जहाजों को एक सार्वभौमिक शिपबोर्न स्वचालित पहचान प्रणाली ले जाने की भी आवश्यकता है, जो डीएससी-संगत होगा। जीएमडीएसएस ए 1 क्षेत्र वाले देश किसी भी अतिरिक्त रेडियो उपकरण के बिना अपने पानी में एआईएस - सुसज्जित जहाजों की पहचान और ट्रैक करने में सक्षम होना चाहिए। एक डीएससी-सुसज्जित रेडियो से पूछताछ नहीं की जा सकती है और तब तक ट्रैक नहीं किया जाता जब तक कि उस निर्माता को निर्माता द्वारा शामिल नहीं किया गया हो, और जब तक कि उपयोगकर्ता इसे ट्रैकिंग की अनुमति देने के लिए कॉन्फिगर नहीं करता।

जीएमडीएसएस दूर संचार उपकरण केवल आपातकालीन उपयोग के लिए आरक्षित नहीं होना चाहिए। अंतर्राष्ट्रीय समुद्री संगठन नियमित रूप से सुरक्षा और दूरसंचार के लिए जीएमडीएसएस उपकरण का उपयोग करने के लिए मरीनर्स को प्रोत्साहित करता है।

जी एम डी एस एस समुद्री क्षेत्रों

जीएमडीएसएस समुद्री क्षेत्र दो उद्देश्यों की पूर्ति करते हैं : उन क्षेत्रों का वर्णन करने के लिए जहां जीएमडीएसएस सेवाएं उपलब्ध हैं, और परिभाषित करने के लिए कि जीएमडीएसएस जहाजों को कौन से रेडियो उपकरण ले जाना चाहिए

(कैरिज आवश्यकताएं)। जीएमडीएसएस से पहले, रेडियो सुरक्षा उपकरण जहाजों की संख्या और प्रकार को अपने टन पर निर्भर किया गया था। जीएमडीएसएस के साथ, रेडियो सुरक्षा उपकरणों के जहाजों की संख्या और प्रकार को जीएमडीएसएस क्षेत्रों पर निर्भर करता है, जहां वे यात्रा करते हैं। जीएमडीएसएस समुद्री क्षेत्रों को चार क्षेत्रों में वर्गीकृत किया गया है: ए 1, ए 2, ए 3 और ए 4।

सागर क्षेत्र ए 1

कम से कम एक वीएचएफ तट स्टेशन के रेडियो टेलिफोन कवरेज के भीतर एक क्षेत्र जिसमें निरंतर डिजिटल चुनिंदा कॉलिंग (सीएच 70 / 156.525 मेगाहर्ट्ज) चेतावनी और रेडियो टेलिफोनी सेवाएं उपलब्ध हैं। इस तरह का एक क्षेत्र को स्टेशन से आमतौर पर 30 से 40 समुद्री मील (56 से 74 किमी) तक बढ़ाया जा सकता है।

सागर क्षेत्र ए 2

कम से कम एक एमएफ तटस्टेशन के रेडियो टेलिफोन कवरेज के भीतर, जिसमें सतत समुद्री डाकू (2187.5 केएचजे) चेतावनी और रेडियो टेलिफोनी सेवाएं उपलब्ध हैं, जैसा अंतर्राष्ट्रीय समुद्री संगठन द्वारा परिभाषित किया गया है। इस क्षेत्र की यात्रा करने वाले जीएमडीएसएस-विनियमित जहाजों में सागर क्षेत्र ए 1 के लिए आवश्यक उपकरणों के अतिरिक्त एक डीएससी-सुसज्जित एमएफ रेडियो टेलिफोन होना चाहिए।

सागर क्षेत्र ए 3

एक इमारत सैटजियो स्टेशनरी उपग्रहके कवरेज के भीतर समुद्र क्षेत्रों ए 1 और ए 2 को छोड़कर एक क्षेत्र। यह क्षेत्र 76 डिग्री उत्तर और दक्षिण अक्षांश के बीच स्थित है, लेकिन ए 1 और / या ए 2 नामित क्षेत्रों को छोड़ता है। इमारत गारंटी देता है कि उनकी प्रणाली 70 दक्षिण और 70 उत्तर के बीच काम करेगी, हालांकि यह अक्सर 76 डिग्री दक्षिण या उत्तर में काम करेगी।

सागर क्षेत्र ए 4

सागर क्षेत्र ए 1, ए 2 और ए 3 के बाहर एक क्षेत्र सागर क्षेत्र ए 4 कहा जाता है। यह अनिवार्य रूप से ध्रुवीय क्षेत्रों, उत्तर और दक्षिण में लगभग 76 डिग्री अक्षांश है, जिसमें किसी भी ए 1, ए 2 और ए 3 क्षेत्रों को छोड़ दिया गया है।

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(h)	MRSSC Beypore	495 2417995 M-SAR Call: 1554	495 2417994	e-mail: cgs-bpe@indiancoastguard.nic.in
(j)	MRSSC Vizhinjam	471 2481855 M-SAR Call: 1554	471 2486484	Inmarsat-C 441900449 Inmarsat Mini-M 762484123(Voice) 762484124(Fax) 762484125(Data) e-mail: cgs-vzm@indiancoastguard.nic.in

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