Safe Waters

NEWSLETTER

On Maritime Safety and Security

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भारतीय तटरक्षक
वयम रक्षामः

NATIONAL MARITIME SEARCH AND RESCUE BOARD

A Publication of the Indian Coast Guard

From the Desk of the Chairman
National Maritime Search & Rescue Board
& Director General Indian Coast Guard

Dear Reader,

'*Safe Waters*' reflects the Indian Coast Guard's commitment to keep our readers abreast of notable efforts to fortify India's Maritime Search and Rescue (M-SAR) framework. The newsletter explores diverse initiatives boosting the SAR framework, incorporating cutting-edge technology and collaborations with national and international partners, which enable us to respond swiftly and efficiently to maritime challenges.

Recent positive collaboration among national SAR focal points, namely the Maritime Rescue Coordination Centers (MRCCs) and resource agencies, showcase the adaptability and coordination of the Indian M-SAR framework, evident in saving 288 lives in distress at sea in the last six months. We delve into the training programmes, collaborative initiatives and international partnerships for continuous enhancement of our capabilities. *'Safe Waters'* serves as a platform to highlight our partnerships with national and international counterparts, emphasizing our collective commitment to global maritime safety.

In the preceding six months, the NMSAR Board oversaw significant Search and Rescue (SAR) initiatives, including Regional SAR exercises and technological advancements such as DAT SG, SARAT and SARAT-I in collaboration with AAI, INCOIS and INMCC. Enhanced information sharing between neighboring MRCCs through SAR Communication exercises has bolstered Regional SAR capabilities in the Indian Ocean Region. The 21st National Maritime Search and Rescue (NMSAR) Board meeting in Oct 23 showcased dedicated participation, affirming our commitment to strengthening the M-SAR construct in the Indian Search and Rescue Region through a coordinated approach.

Notwithstanding progress, the safety of fishermen at sea remains a significant concern. There has been a notable increase in man-overboard incidents. In the past year, there were 77 reported cases of man-overboard incidents from fishing boats of which 29 were successfully rescued. ISRO's dedicated efforts, including the development of Second-Generation 'Distress Alert Transmitters', aims to enhance fishermen's safety and reduce the lives lost at sea. While technological progress addresses this issue, a comprehensive approach at all levels is imperative for a lasting solution.

As the Chairman of the NMSAR Board, I advocate a collaborative approach to address future challenges, expressing unified efforts for seafarers' safety in the ISRR. May *'Safe Waters'* continue to serve as a perennial source of inspiration, fostering a deeper understanding of the maritime environment and challenges, reinforcing our commitment to excellence in service to the nation.

Jai Hind … VAYAM RAKSHAMAH…

(Rakesh Pal)
Director General, Indian Coast Guard
Chairman
National Maritime Search & Rescue Board

New Delhi

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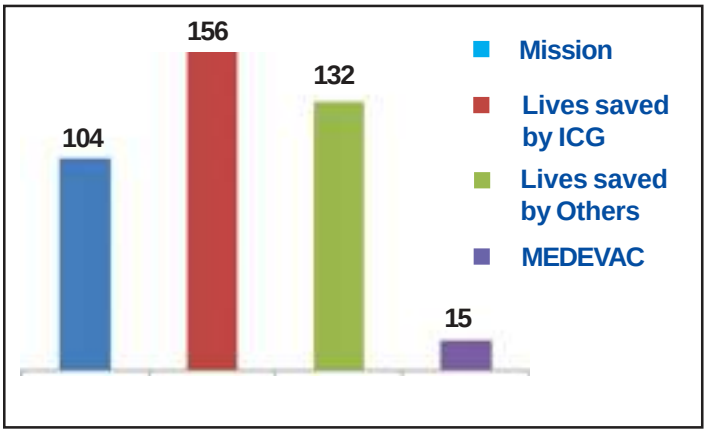
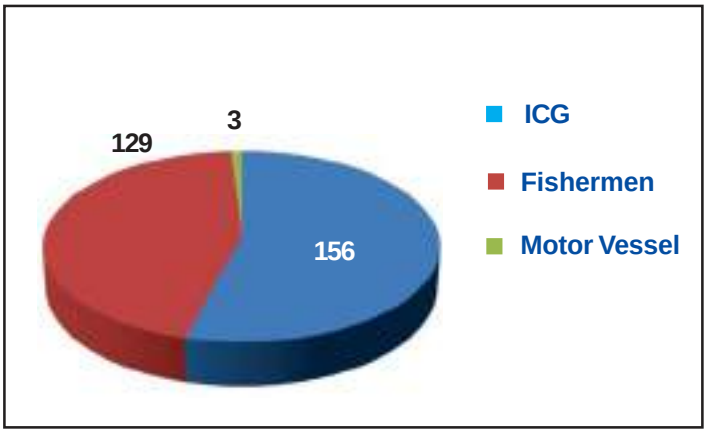
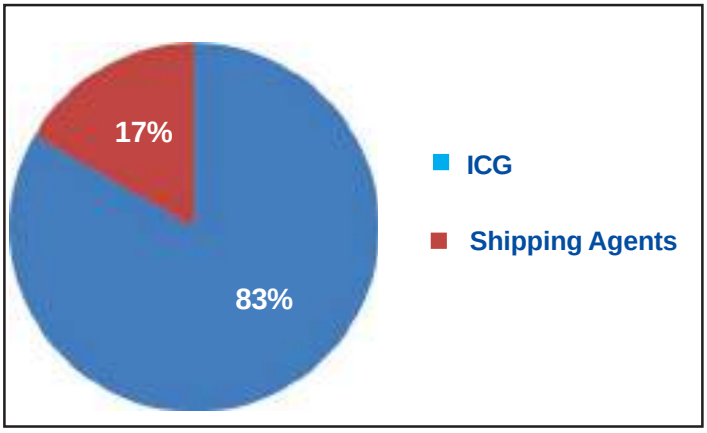
ICG - MARITIME SEARCH & RESCUE STATISTICS



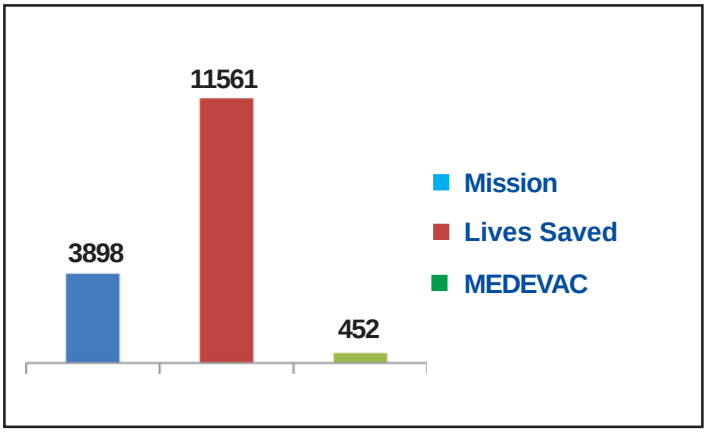
SAR by ICG : Jul - Dec 23



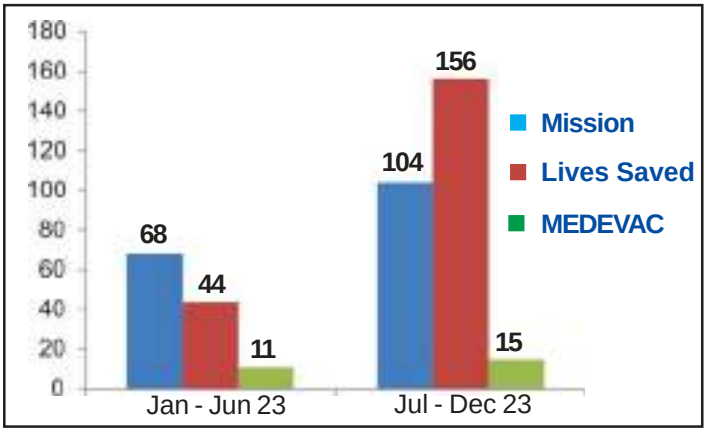
Lives Saved : Jul-Dec 23



Medical Evacuation : Jul - Dec 23



ICG SAR Data : Since Inception



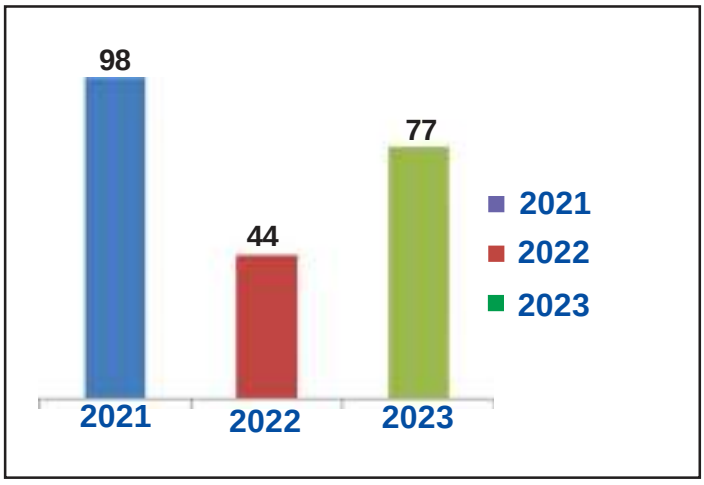
ICG SAR Data : Comparison

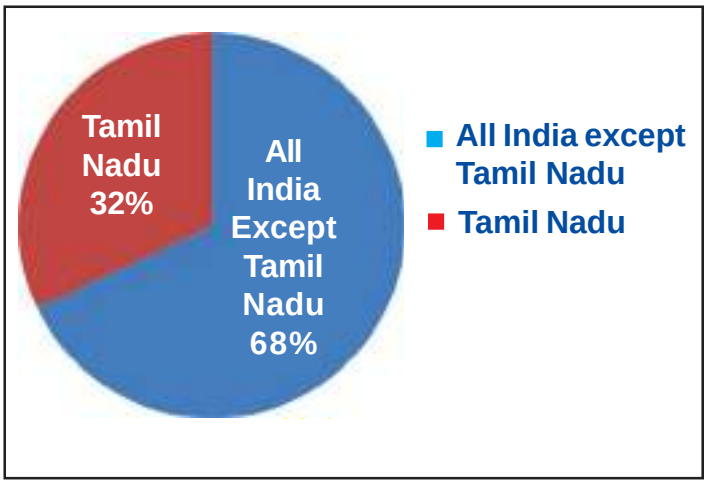
FISHERMEN FALLING OVERBOARD FROM BOATS / MAN OVERBOARD (MOB) INCIDENTS

✓ Analysis of MOB incidents reported to ICG in last three years (2021-2023).

✓ MOB incidents continue to remain high.

✓ From high of 98 MOB incidents in 2021, a drop up to 44 incidents was observed in 2022 but again MOB incidents spiked upto 77 in 2023.





Analysis indicates out of 219 MOB incidents during last three years, 70 incidents i.e. 32% were reported in Tamil Nadu.

✓ Indian Coast Guard conducts Community Interaction Programme (CIP) in coastal areas and sensitise fishing community on safety issues e.g., wearing of life jackets, group fishing and availability of safety equipment onboard boats etc.

✓ Concerted efforts towards enforcement of regulatory provisions and community awareness drives for reducing Man Overboard incidents are essential from Coastal State / UT administration.

MARITIME SAR EVENTS

SAR Communication Exercises (Jul - Dec 23)

SAR Communication Exercises (SARCOMEX) are conducted with leading SAR service providers of the world with a view to reinforce operational linkages and to provide opportunity to MRCC operators in coordinating with other MRCC/ RCC. During Jul - Dec 23, total of 12 SARCOMEX were conducted.

Ser	Agencies Participated in SARCOMEX	Date
(a)	MRCC Chennai - MRCC Male	06 Jul 23
(b)	MRCC Mumbai - MRCC Mauritius	07 Jul 23
(c)	MRCC Mumbai - MRCC Ankara	28 Jul 23
(d)	MRCC Port Blair - MRCC Nhatrang	08 Aug 23
(e)	MRCC Mumbai - MRCC Corsen	14 Sep 23
(f)	MRCC Port Blair- MRCC Philippines	21 Sep 23
(g)	MRCC Port Blair - RCC Jeju	19 Oct 23
(h)	MRCC Port Blair - RCC Hiroshima	24 Oct 23
(j)	MRCC Chennai - JRCC Seychelles	14 Nov 23
(k)	MRCC Mumbai - MRCC Singapore	21 Nov 23
(l)	MRCC Chennai - MRCC Dhaka	06 Dec 23
(m)	MRCC Port Blair - RCC Makassar	29 Dec 23

Maritime SAR Workshops

Under the aegis of NMSAR Board, ICG conducts SAR workshops of one-two days duration in Coastal States and Union Territories. These workshops are aimed at enhancing awareness and safety consciousness amongst the fishermen and strengthening the Maritime SAR (M-SAR) construct by involving the respective Fishing Associations/ Authorities and other resource agencies/ stakeholders towards inclusive effort. During Jul-Dec 2023, total nine Maritime SAR (M-SAR) Workshops were conducted.

Ser	Date	Venue of Workshop
(a)	12-13 Jul 23	Diglipur
(b)	21 Jul 23	Mumbai
(c)	25 Jul 23	Tuticorin
(d)	09-10 Aug 23	Haldia
(e)	22 Aug 23	New Mangalore
(f)	24 Aug 23	Daman
(g)	20-21 Sep 23	Port Blair
(h)	20 Sep 23	Chennai
(j)	09 Nov 23	Vizag

21st National Maritime Search & Rescue Board Meeting

In the series of Annual Maritime Search and Rescue (M-SAR) Board meetings, the 21st National Maritime Search and Rescue (NMSAR) Board meeting was conducted at Kolkata on 12 Oct 23. The meeting was chaired by Director General Rakesh Pal, AVSM, PTM, TM, Chairman NMSAR Board and was attended by 31 NMSAR Board members and special invitees including representatives from Coastal States. Various initiatives undertaken by ICG in coordination with other stakeholders/ resource agencies for strengthening the M-SAR services under the aegis of the NMSAR Board were highlighted and deliberated. The highlights of the 21st NMSAR Board meeting were the overwhelming participation of NMSAR Board members, special invitees, Awardees and also the wide-ranging discussions in the meeting to strengthen M-SAR construct in Indian Search and Rescue Region through collaborative participation of stakeholders. Further, various agenda related to safety of fishermen at sea were also deliberated during the meeting.

NMSAR Board recognises the SAR efforts by all stakeholders including merchant mariners, government owned vessels, shore units and fishermen every year. During the inaugural session of the meeting, SAR award for the year 2022-23 were awarded by the Chairman under different categories as given below:-

(a) **SAR Award for 'Merchant Vessel'.** The award was conferred to **MV Furious (Flag–UK/Great Britain) for saving 10 Indian fishermen ex-disabled IFB Lourdumatha (IND-TN-15-MM-320)** in Maldives Search & Rescue Region (713 Nautical miles South of Muttam Point) on 26 Apr 23.

(b) **SAR Award for 'Fisherman'**. The award was presented to **Shri Netai Maity, Master of IFB New Aparajita (IND-WB-DS-MM-8340)** from West Bengal for **saving 17 lives of fishermen from IFB Anik-1 (IND-WB-DS-MM-2168)** in position 51 nautical miles South-East of Sagar Light on 20 Jul 23.

(c) **SAR Award for 'Government Owned Unit'.** In this category, the award was jointly presented to **ICGS Sujeet and 835 SQN (ICG)**. ICGS Sujeet was awarded **for rendering towing assistance to distressed research vessel Sindhu Sadhana on 26 Jul 23, which was adrift off Karwar with 28 crew members and 09 scientists onboard** due to a technical snag that resulted in complete propulsion failure. 835 Squadron (CG), which operates ICG advanced Light Helicopters (ALH) was awarded for performing **04 Search and Rescue operations and 01 MEDEVAC (Medical Evacuation) operation, resulting in the saving of total 57 precious lives.**

(d) **SAR Award for 'Ashore Unit'**. SAR award for ashore unit was jointly presented to **Gujarat Maritime Board (GMB) and Indian Mission Control Centre (INMCC), ISRO**. GMB was awarded for leading the multi-agency coordination effort on 15 Jun 23 for **ensuring safety of MV Hai Nam 81 with 22 crew (all Vietnamese)** which was in distress due to engine failure. Further, coordination by GMB in another operation for **evacuation of 50 crew from Rig 'Key Singapore' during Cyclone Biparjoy** was also recognized. INMCC was awarded for maintaining efficient coordination with MRCCs, support to Beacon user agencies, establishment of a Central DAT Hub & MEOSAR and maintenance of the Beacon registration database besides continuous operation of the 24x7 COSPAS-SARSAT services.

Regional Search and Rescue Exercise

Regional Search and Rescue exercise are conducted to check preparedness of stakeholders towards response in case of large scale maritime disaster in Arabian Sea and Bay of Bengal. Often Mass Rescue Operation drill is exercised with emphasis on role of state/ Local administration in handling of injured/ deceased persons and establishing of triage services. During the period Jul-Dec 2023, a two day Regional SAREX was conducted from 30-31 Oct 23 at Paradip. Wherein, on first day i.e. 30 Oct 23, Workshop/ Seminar was conducted and on the second day i.e 31 Oct 23, Sea Exercise was conducted. In the sea Exercise, 04 ICG ships, 02 Aircraft, 02 vessels ex Paradip Port, 01 Customs boat and 01 boat ex Fisheries Department participated. Other stakeholders which actively participated in the SAREX included Odisha SDMA, Local Police, Customs, Forest, Fisheries, IOCL, Paradip Port, Dhamra Port, INMCC and Local Hospitals.

18th M-SAR Refresher Course for MRCC/ RCC Operators

Civil Aviation Training College, Prayagraj of Airports Authority of India (AAI) conducted 18th M-SAR (Maritime Search & Rescue) refresher course for personnel from ICG & Airports Authority of India (AAI) from 17-19 Jul 23. The aim of M-SAR refresher course was to impart training to MRCCs and RCCs operators on various aspects of GMDSS and SAR related issues thereby enhancing operator skill set & invigorate synergy between ICG, AAI and INMCC. A total of 18 ICG and AAI Officers and personnel were trained during the course. Various facets of Search and Rescue with emphasis on mutual synergy between stakeholders were discussed during the training.

19th M-SAR Refresher Course for MRCC/ RCC Operators

Indian Coast Guard Region East conducted 19th M-SAR (Maritime Search & Rescue) refresher course for personnel from ICG & AAI at Maritime Rescue Coordination Centre, Chennai from 14-16 Dec 23. The aim of M-SAR refresher course was to impart training to the MRCCs and RCCs operators on various aspects of GMDSS and SAR related issues thereby enhancing operator skill set & invigorate synergy between ICG, AAI and INMCC. A total of 25 ICG and AAI Officers and personnel were trained during the course. As a part of training programme, visit of trainees to RCC Chennai was also conducted. In addition visit to MRCC Chennai for all trainees was also conducted with an aim to give insight on MRCC SAR operator duties and SAR procedure for coordination of M-SAR operations.

MARITIME SAR BULLETIN

(01 Jul - 30 Dec 23)

SEARCH & RESCUE COORDINATION

Rescue of 05 crew - IFB 'UK Sons'

At 1042 h on 05 Jul 23, Maritime Rescue Sub Centre (MRSC), Beypore received information from AD Fisheries, Beypore regarding IFB UK Sons along with 05 crew stranded in position 08 N miles West of Beypore due to inclement weather conditions. On receipt of information, ICG Ship Abheek whilst en-route passage from Kochi to New Mangalore was diverted for rendering assistance to the stranded IFB on 06 Jul 23. Further, ICG ship rescued all 05 crew from the IFB at 2045 h and proceeded to New Mangalore. Thereafter, the ship arrived New Mangalore harbour at 1425 h on 07 Jul 23 and handed over 05 crew in healthy condition to local authorities for onward passage to Beypore. Subsequently, the disabled IFB was towed by another IFB arranged by the owner on 07 Jul 23.

Stranded - IFB 'Ettukudi Murugan Thunai'

At 1313 h on 09 Jul 23, MRSC Puducherry received information from AD Fisheries, Cuddalore regarding IFB Ettukudi Murugan Thunai along with 03 crew stranded in position 13 N miles North-East of Puducherry due to engine failure. The boat owner requested ICG for evacuation of the stranded fishermen. On receipt of information, ICG Interceptor Craft (IC) was deployed from Puducherry for assistance of the stranded IFB. ICG ship reached datum and rescued 02 fishermen from the stranded IFB at 1645 h on 09 Jul 23. Thereafter, ICG ship along with 02 fishermen entered harbour at 2045 h on 09 Jul 23. Subsequently, the stranded IFB along with one fisherman was towed by another IFB to Thengaithithu fishing harbour at 1715 h on 10 Jul 23.

Adrift - IFB 'Ma Basanti'

At 0836 h on 14 Jul 23, ICGS Vijaya received a VHF call from IFB Ma Basanti adrift in position 80 N miles South-East of Sagar Island Lt view engine failure. ICGS Vijaya immediately shaped course towards disabled IFB amidst inclement weather and arrived datum at 0903 h on 14 Jul 23. Subsequently, the ship's technical team boarded the distressed IFB to render technical assistance. However, the defect could not be rectified due to the non-availability of spares. ICG Ship towed IFB to the nearest fishing cluster in position 69 N miles South-East of Sagar Island Lt and coordinated with IFB Jhar to tow IFB Ma Basanti to Kakdwip harbour. All 14 crew along with IFB Ma Basanti reached harbour safely on AM 15 Jul 23.

Rescue of 17 Fishermen - IFB 'Anik-01'

At 2005 h on 20 Jul 23, MRSC Haldia received information from owner of IFB Anik-1 regarding flooding onboard the IFB in position 51 N miles South-East of Sagar Lt. On receipt of the information, ICG Ships Kamla Devi and Anmol, on area patrol were diverted at 2100 h on 20 Jul 23 for undertaking SAR of the IFB. Subsequently, ICG ship Anmol coordinated with another IFB Aparajitha to render assistance to distressed IFB. At 2200 h on 20 Jul 23, all 17 crew ex-distressed IFB were rescued, however, distressed IFB Anik-1 sunk in position 51 N miles South-East of Sagar Lt. at about 2215 h on 20 Jul 23. IFB Aparajitha along with 17 rescued crew entered Narayanganj fishing harbour safely at 2340 h on 20 Jul 23.

Rescue of 03 Fishermen - IFB 'B Gouri'

At 1710 h on 28 Jul 23, ICG ship C-145 on area patrol sighted 03 persons floating at sea and in distress in position 1.8 N miles South-East of East Island, Diglipur, Andaman & Nicobar Islands. Subsequently, ICG Ship rescued all three persons, embarked onboard and provided first aid. On investigation, it was ascertained that all (03) rescued persons belonged to IFB B Gouri (AN Regd), which had ventured into sea at 0630 h on 28 Jul 23 and thereafter, amidst adverse sea conditions the engine stopped functioning which led to flooding and subsequent sinking of the IFB. Subsequently, the ICG ship brought them to Diglipur harbour at 1830 h on 28 Jul 23 and handed over to local fisheries authority for further formalities.

Towing Assistance - Research Vessel 'Sindhu Sadhana'

At 1413 h on 26 Jul 23, MRCC Mumbai received information from Council of Scientific & Industrial Research - National Institute of Oceanography (CSIR-NIO) Goa regarding Research Vessel Sindhu Sadhana adrift due to total power failure in position 20 N miles West of Karwar. The vessel had 36 personnel (28 crew and 08 Scientist) onboard. On receipt of information, ICGS Sujeet on routine patrol was diverted for assistance. ICGS Sujeet arrived datum at 1700 h on 27 Jul 23 and took the disabled vessel under tow at 1903 h on 26 Jul 23. Subsequently, ICGS Sujeet handed over the vessel to Emergency Towing Vessel (ETV) Water Lily/ Mormugao Port Trust Tug off Mormugao harbour at 2107 h on 28 Jul 23.

Flooding Onboard - IFB 'Mariyam'

At 0825 h on 29 Jul 23, MRSC Kochi received information from Kochi Port Control that MV Tilakkam on passage to Lakshadweep sighted IFB Mariyam in distress due to flooding in position 21 N mile North-West of Kochi. On receipt of information, ICG Ship Arnvesh on area patrol was diverted to render assistance. ICG Advanced Light Helicopter (ALH) in area was also directed to maintain in proximity of the distressed IFB. ICGS Arnvesh arrived datum at 0915 h on 29 Jul 23 and assessed the flooding situation onboard IFB. Subsequently, the distressed boat was taken alongside ICG ship and all the 08 crew were embarked onboard. Further, the Damage Control (DC) team of the ICG Ship undertook de-flooding and arrested the flooding using DC material and equipment. Thereafter, the IFB entered Munambam Fishing Harbour, Kochi under escort of ICG Ship at 1610 h on 29 Jul 23.

Towing Assistance - IFB 'Harishma'

At 1930 h on 01 Sep 23, MRCC Port Blair received information from Head of Fishermen Association (Mr. Robin Farnadise), Port Blair regarding IFB Harishma along with 11 crew stranded due to engine failure in

position 15 N miles South-East of Keating point, off Car Nicobar Island. On receipt of the information, ICG ship Rajdhwaj on area patrol was diverted for rendering assistance to distressed IFB. ICG Ship arrived datum at 0200 h on 02 Sep 23. Post ascertaining safety of crew and assessing the feasibility of engine defect rectification, ICG ship took disabled IFB under tow and proceeded towards Carnic. At 0700 h on 02 Sep 23, the ICG Ship arrived off Carnic Harbour and handed over IFB along with crew to another IFB Adona, arranged by owner.

Stranded - IFB 'Ganapathi Perumal'

At 1342 h on 04 Sep 23, Maritime Rescue Coordination Centre (MRCC), Chennai received information from AD Fisheries, Chennai regarding IFB Ganapathi Perumal stranded in position 207 N miles North-East of Chennai due to engine failure. Subsequently, ICG Dornier ex Chennai was tasked at 0855 h on 05 Sep 23. CGDO located the stranded IFB in position 77 N miles South-East of Kakinada. At 1701 h on 05 Sep 23, ICG Ship Ayush on area patrol was diverted for rendering assistance. At 0630 h on 06 Sep 23, the ship's technical team boarded the disabled boat; however, attempts to rectify the defect proved futile. Thereafter, ICG Ship took the IFB under tow and proceeded to Vizag fishing harbour. Upon arrival, the IFB along with 10 crew were handed over to Fisheries authority on 07 Sep 23.

Stranded - IFB 'Bhaskar-III'

At 1145 h on 10 Sep 23, ICG Dornier on surveillance sighted IFB Bhaskar III with 09 crew onboard stranded due to mechanical failure in position 52 N miles North West of Indira Point and seeking assistance. Subsequently, CGDO communicated information to MRSC Campbell Bay. On receipt of information, ICG Ship Rajkiran on area patrol was diverted to render assistance. At 1400 h on 10 Sep 23, the ICG ship took the disabled IFB under tow and proceeded to Campbell Bay harbour. Upon arrival, IFB along with 09 crew were handed over to the local fisheries authority.

Rescue of 03 Sri Lankan Fishermen Ex - Capsized SLFV 'Neel Marine'

At 1008 h on 14 Sep 23, MRCC Chennai received information from Indian flagged ship MV Intersea Voyager regarding sighting of a capsized boat and 03 persons floating in position 266 N miles East of Krishnapatnam. On

receipt of information, MRCC Chennai requested MV Intersea Voyager to provide necessary assistance. Subsequently, the vessel rescued all 03 survivors at 1052 h on 14 Sep 23. Further, the vessel administered first aid to the survivors and their condition was reported to be stable. On investigation, it was ascertained that the rescued survivors were fishermen and belonged to SLFV Neel Marine from Hambantota, Sri Lanka. Subsequently, the vessel along with 03 rescued fishermen proceeded towards Hambantota, Sri Lanka. Further, in coordination with MRCC Colombo, the vessel handed over the rescued fishermen to the Sri Lankan Naval Boat P 421 off Hambantota at 1050 h on 17 Sep 23.

Stranded - IFB 'Messian Antony'

At about 1830 h on 08 Oct 23, ICG Ship Saksham while on patrol in Lakshadweep & Minicoy area sighted an IFB along with 03 dinghies adrift in position 38 N miles South-West of Agatti Island due to engine failure since 05 Oct 23. Subsequently, ICG Ship Saksham dispatched the technical team for defect rectification onboard distressed IFB at 1900 h on 08 Oct 23; however, efforts for defect rectification proved futile view non-availability of requisite machinery spares. Thereafter, master of the distressed boat requested for towing assistance to the nearest Island to establish communication with the owner for further assistance. At 0700 h on 09 Oct 23, ICG Ship took the distressed boat along with 14 crew under tow and arrived safely off Agatti Island harbour. Thereafter, the distressed boat anchored off Agatti Island and established communication with local fisheries authorities for further assistance.

Engine Shaft Broken of IFB 'Sathya'

At about 0816 h on 12 Oct 23, MRCC Port Blair received a Distress Alert Transmitter (DAT) alert from DAT ID-37027 in position 07 N miles North-West of East Island. On receipt of information, ICG Ship C-417 was deployed at 1000 h on 12 Oct 23 to investigate the distress alert. On arrival at datum, ICG Ship established communication with distressed fishing boat IFB Sathya and ascertained that engine shaft of IFB was broken. Subsequently, ICG ship took disabled IFB under tow and proceeded to Diglipur harbour. At 2045 h on 12 Oct 23, the IFB along with all crew was safely brought at Diglipur harbour.

Man Overboard - MV 'Nalanda'

At 1740 h on 02 Nov 23, MRSC Kamorta received information from Nancowry administration regarding missing person from MV Nalanda off Trinket Island at 1720 h on 02 Nov 23. On receipt of information, ICG Ship on area patrol was diverted for SAR. Extensive search was carried out by ICG Ship in coordination with Naval Fast Interceptor Crafts (FICs), Coastal Police and Fisheries Department. Subsequently, at 1855 h, missing person was rescued by *IN* FIC and handed over to civil authorities at 2000 h on 02 Nov 23.

Stranded IFB 'Mageswari'

At 1115 h on 04 Nov 23, MRCC Chennai received information from owner of IFB Mageswari regarding the IFB being stranded in position 33 N miles North-East of Chennai due to engine failure. On receipt of information, ICG Ship C-440 was deployed to render assistance to distressed IFB. ICG Ship arrived datum at 1730 h on 04 Nov 23 and established communication with the stranded IFB. Subsequently, the boat along with 07 crew was towed by another boat arranged by the owner to Kasimedu fishing harbour, Chennai.

Stranded - IFB 'Sorayya'

At 1515 h on 20 Nov 23, CGDO during routine surveillance, received a distress call from IFB Sorayya in position 40 N miles South West of East Island, Andaman & Nicobar, seeking assistance due to engine failure and non-availability of food. On receipt of information, ICGS Ship Aruna Asaf Ali was diverted for assistance of the disabled IFB. ICG Ship arrived datum at 1900 h on 20 Nov 23 and ascertained that main shaft and gearbox of the IFB were broken. Subsequently, at 2115 h on 20 Nov 23, ICG ship took the disabled IFB under tow and proceeded towards Diglipur harbour. ICG Ship along with distressed IFB and its six crew entered Diglipur harbour at 1230 h on 21 Nov 23. All crew in healthy condition were handed over to Fisheries Department.

Stranded - IFB 'Adonai'

At 1005 h on 22 Nov 23, MRCC Port Blair received information from owner of IFB Adonai regarding adrift IFB with 13 crew onboard in position 18 N miles South of Keating Point, Andaman & Nicobar Islands due to engine failure. On receipt of information, ICG Ship Vishwast on area patrol was diverted to render assistance to the

distressed IFB. The ICG ship arrived datum at 0002 h on 23 Nov 23. The ship's technical team boarded the distressed IFB for defect rectification; however, attempts proved futile view engine shaft was broken. Subsequently, ICG ship took the IFB under tow and proceeded towards Carnic anchorage for safe shelter. At 0800 on 23 Nov 23, ICG ship disengaged the disabled IFB off Sawai Bay (Carnic Anchorage). All 13 crew were reported to be safe.

Stranded - IFB 'Harishma'

At 1853 h on 24 Nov 23, MRCC Port Blair received information regarding adrift IFB Harishima in position 22 N miles South of Little Andaman Island view wheel pump failure. On receipt of information, ICG Ship C-412 was deployed from Hutbay. ICG ship arrived datum and took the IFB Harishma under tow at 0215 h on 25 Nov 23. Further, ICGS C-412 alongwith IFB Harishma entered Hutbay at 1330 h and handed over the IFB to local fisheries department.

Rescue and Repatriation of Bangladeshi Fisherman

At 1200 h on 23 Nov 23, ICG Dornier from Coast Guard Air Enclave (CGAE) Kolkata during routine surveillance received information regarding rescue of one Bangladeshi national by IFB Narendra-II on 21 Nov 23 in position 86 N miles South East of Paradip. On investigation, it was ascertained that the survivor was from sunken Bangladeshi fishing boat which had capsized at sea on 17 Nov 23 during cyclone 'Midhili'. Subsequently, ICG Dornier vectored ICG ship Anmol in area to recover the Bangladeshi fisherman. ICG ship reached datum and recovered the fisherman from IFB Narendra-II at 1330 h on 23 Nov 23. The fisherman was provided with first aid as boils/cut marks were observed on his body. Further, his vitals were observed to be normal. The survivor was also provided with food and clothing. Subsequently, ICG Ship Anmol transferred the rescued Bangladeshi Fisherman to ICG ship Varad on PM 23 Nov 23 for repatriation to Bangladeshi Coast Guard (BCG) ship off IMBL in accordance with existing SOPs and MoU between the two Coast Guards. ICG Ship Varad handed over the rescued fisherman to BCG Ship Shadhin Bangla (P-206) at 1430 h on 24 Nov 23 off IMBL.

MEDICAL EVACUATION (MEDEVAC)

(01 Jul - 30 Dec 23)

MEDEVAC Ex - MT 'Celsius Copenhagen'

At about 2038 h on 12 Jul 23, MRCC Mumbai received information from master of MT Celsius Copenhagen regarding medical emergency onboard view an Indian crew suffered with chest pain in position 100 N miles South–West of Porbandar. On receipt of information, Indian Coast Guard Advanced Light Helicopter (ICG ALH) from Coast Guard Air Enclave (CGAE) Porbandar was launched at 0555 h on 13 Jul 23 and patient was evacuated and brought ashore. Thereafter, the patient was handed over to local agent and shifted to Global hospital, Porbandar for further medical management.

MEDEVAC Ex - Crane Barge 'Saipem Endeavour'

At about 0949 h on 14 Jul 23, MRCC Mumbai received information from M/s Benline Agencies, Mumbai regarding medical emergency onboard Crane Barge Saipem Endeavour view a Philippines national suffered with appendicitis in position 154 N miles South-West of Prongs Lt (Mumbai). The vessel was under tow and on passage from Dubai to Colombo. On receipt of the information, ICGS Samrat on patrol was diverted for medical evacuation of the patient. At 2130 h on 14 Jul 23, ICGS Samrat effected rendezvous with Saipem Endeavour; however, attempts to lower Gemini for evacuation of patient were unsuccessful view inclement weather conditions. Subsequently, on 15 Jul 23, Indian Naval Sea king-514 was launched and patient was evacuated about 56 nautical miles from Mumbai. Thereafter, patient was handed over to local agent for further medical management.

MEDEVAC Ex - MT Global Star

At about 0857 h on 23 Jul 23, MRCC Mumbai received information from MRCC Rome regarding medical emergency onboard MT Global Star view an Indian crew suffered with high BP/ Stroke in position 110 N miles North-West of Kochi. On receipt of information, ICGS Arnvesh on patrol was diverted for assistance. Further, ICG ALH from Kochi was launched at 0845 h on 24 Jul 23 and evacuated the patient at 1005 h on 24 Jul 23. Thereafter, patient was shifted to Gautham Hospital, Ernakulam for further medical management.

MEDEVAC Ex - MV 'Evelyn Maersk'

At 1543 h on 13 Aug 23, MRCC Mumbai received information from MRCC Chennai regarding medical emergency onboard MV Evelyn Maersk view a Filipino crew suffered with cardiac attack in position 49 N miles South-West of Vizhinjam Lt. On receipt of information, ICGS C-427 from Vizhinjam was deployed for evacuation of the patient. Subsequently, ICG ALH from CGAE Kochi was also launched for evacuation of patient. However, due to non-availability of landing/winching facility onboard the ship, disembarkation of patient could not be undertaken despite numerous attempts. Considering the condition of the patient, ICG Ship C-427, maintaining in vicinity was tasked for evacuation of patient. Accordingly, the patient was evacuated by ICG Ship C-427 at 2215 h on 13 Aug 23. Thereafter, patient was handed over to local agent for further medical management.

MEDEVAC Ex - RV Dong Fang Kan Tan No. 2

At about 1535 h on 16 Aug 23, MRCC Mumbai received information from Executive (Operations), M/s GAC Shipping (India) Pvt. Ltd regarding medical emergency onboard RV Dong Fang Kan Tan No. 2 view a Chinese crew suffered with Cardiac symptoms in position 124 N miles South-West of Prongs Lt (Mumbai). On receipt of the information, medical advice was provided by ICG medical officer. Further, considering critical health condition of the patient, at about 0008 h on 17 Aug 23, ICG ALH from Daman was launched to

evacuate the patient. Susequently, the patient was airlifted at 0150 h on 17 Aug 23 in position 122 N miles South West of Daman and shifted to Haria LG Rotary Civil Hospital, Vapi for further medical management.

MEDEVAC Ex - MV 'Thermopylae'

At about 2010 h on 02 Sep 23, MV Thermopylae telephonically informed MRCC Port Blair regarding medical emergency onboard view a 56 yrs old Filipino crew reported severe abdominal pain combined with blood in urine. On receipt of the request for medical evacuation, the vessel was advised to proceed with best speed to a mutually decided R/V position. Vessel affected R/V with ICGS Rajdhwaj at promulgated position at 0410 h on 03 Sep 23 and patient was evacuated by the ICG ship. Further, the ICG Ship brought patient ashore at Campbell Bay at 0535 h on 03 Sep 23. Thereafter, the patient was transferred to Primary Health Centre (PHC), Campbell Bay for further treatment.

MEDEVAC Ex - MT 'Hua Wei 18'

At about 2122 h on 13 Oct 23, MRCC Mumbai received information from Master of MT Hua Wei 8 regarding medical emergency onboard view a 49 yrs old Chinese crew suffered with stroke combined with hemiplegic in position 122 N miles West of Prongs (Mumbai). On receipt of the information, MRCC Mumbai advised vessel to proceed towards Mumbai for disembarkation of the patient. Meanwhile, the local agent expressed inability to arrange a tug for evacuation of the patient. Subsequently, at 0700 h on 14 Oct 23, ICG Ship C-439 with medical team embarked was deployed from Mumbai for evacuation of the patient. At 0800 h on 14 Oct 23, ICG Ship effected rendezvous with the vessel and evacuated the patient. Therefter ICG ship along with patient entered Mumbai harbour at 1130 h on 14 Oct 23. Subsequently, the patient was handed over to local agent and shifted to Wockhardt Hospital, Mumbai for further medical management.

MEDEVAC - MV 'Rostrum Cynic'

At about 1315 h on 11 Nov 23, ICGS Hutbay informed MRCC Port Blair regarding receipt of information from MV Rostrum Cynic regarding medical emergency onboard view a crew fell down in cargo hold and was suspected to have sustained Spinal injuries along with severe hand injury. On receipt of the request, the vessel was advised to head towards Keating Point. Meanwhile,

ICGS Rajkiran in area was diverted for MEDEVAC. The ICG Ship effected R/V with the vessel at 1730 h on 11 Nov 23 and evacuated the patient. Thereafter, ICG ship along with patient entered Port Blair harbour at 0800 h on 12 Nov 23 and shifted the patient to GB Pant Hospital for further medical management.

MEDEVAC Ex - MV 'Clipper Brunello'

At about 1954 h on 13 Nov 23, MRCC Mumbai received information from DPA & CSO of MV Clipper Brunello regarding medical emergency onboard the vessel view a 55 yrs old Russian crew suffered chest pain in position 386 N miles South-West of Prongs Lt (Mumbai). On receipt of the information, MRCC Mumbai coordinated with local agent of the vessel for medical evacuation. Accordingly, Tug Vijay was arranged by the agent and patient was evacuated at 1115 h on 15 Nov 23. The Tug along with patient entered Mumbai harbour at 1625 h on 15 Nov 23. Thereafter, the patient was shifted to Saifee Hospital, Mumbai for further medical management.

MEDEVAC Ex - IFB 'Asht Vinayak'

At about 1105 h on 22 Nov 23, MRSC Pipavav received information from Fisheries Association, Jafrabad regarding medical emergency onboard IFB Asht Vinayak view a 55 Yrs old fisherman had sustained head injury in position 64 N miles East of Savaibet Lt. On receipt of information, ICG Ship C-409 with medical team embarked onboard was deployed from Pipavav at 1140 h on 22 Nov 23 for evacuation of the patient. At 1200 h on 22 Nov 23, the ICG ship affected R/V with IFB and evacuated the patient. Therafter, the patient was provided with the first aid. Further, the patient was shifted to ICG Interceptor Craft (IC)-111 off Pipavav. ICG IC-111 along with patient entered Pipavav harbour at 1320 h on 22 Nov 23 and patient was shifted to Civil hospital Hanumanta, Mahuva for further medical management.

MEDEVAC Ex - MV 'Anna Schulte'

At 1930 h on 09 Dec 23, M/s Inter Ocean shipping informed MRSC Mundra regarding medical emergency onboard MV Anna Schulte off Mundra view a crew sustained severe finger and palm injury. On receipt of information, ICG Ship C- 403 was immediately deployed at 2000 h on 09 Dec 23. ICG ship reached datum and evacuated the patient at 2230 h on 09 Dec 23. Thereafter, ICG ship along with patient entered West basin, Mundra harbour at 2350 h on 09 Dec 23 and shifted the patient to Adani hospital, Mundra for further medical management.

MEDEVAC Ex - MV 'Green K-Max 2'

At 1140 h on 14 Dec 23, MRCC Chennai received information from MV Green K-Max 2, regarding medical emergency onboard view a 29 Yrs old Filipino crew suffered limb fracture while working in engine room in position 15 N miles North-East of Dolphin Lt (Visakhapatnam). At about 1245 h on 15 Dec 23, ICG Ship C-451 with medical team embarked was deployed from Visakhapatnam. The ICG Ship arrived datum at 1450 h on 15 Dec 23 and evacuated the injured crew. At 1650 h on 15 Dec 23, ICG Ship along with patient entered Visakhapatnam fishing harbour and handed over the patient to local shipping agent for further medical management.

MEDEVAC Ex - MV 'Bulk Lambert'

At about 1825 h on 16 Dec 23, MRCC Chennai received information from local agent of MV Bulk Lambert regarding medical emergency onboard view a Filipino crew sustained severe hand injury in position 50 N miles South of Vishakhapatnam. On receipt of the information, the vessel was requested to close in Vishakhapatnam harbour to facilitate medical evacuation. At about 0600 h on 17 Dec 23, ICG Ship C-451 with medical team embarked was deployed from Visakhapatnam for evacuation of the injured crew. At about 0715 h on 17 Dec 23, the ICG ship effected R/V with the vessel and evacuated the injured crew. Thereafter, at 0915 h on 17 Dec 23, ICG ship C-451 along with patient entered Visakhapatnam fishing harbour and handed over the patient to local shipping agent for further medical management.

MEDEVAC Ex - MV 'Costa Serena'

At about 1825 h 28 Dec 23, MRSC Goa received information regarding medical emergency onboard MV Costa Serana view a 63 yrs old Indian crew was suffering from strong Ischemia and heart trouble in position 45 N miles South-West of Goa. On receipt of information, ICG Ship C-158 was diverted for MEDEVAC. The ICG Ship reached datum at 1750 h on 28 Dec 23 and evacuated the patient along with his spouse and 01 medical attendant ex- MV Costa Serena. Thereafter, ICG ship entered Mormugao harbour at 2015 h on 28 Dec 23 and shifted the patient to Manipal Hospital, Panaji for further medical management.

MARITIME SAR CALENDAR ACTIVITIES

Date	Event	State/ Venue
24 Feb – 04 Mar 24	International Maritime Organization Members State Audit Scheme (IMSAS) Audit of India	Mumbai
07 Mar 24	M-SAR workshop	Andhra Pradesh
19 Mar 24	M-SAR workshop	Gujarat
20 Mar 24	Regional SAREX	Porbandar
28 Mar 24	M-SAR workshop	Tamil Nadu
03-04 Apr 24	M-SAR workshop	Odisha
25-26 Apr 24	M-SAR workshop	West Bengal
26 Apr 24	Regional SAREX	Tuticorin/ Karaikal
14-15 May 24	M-SAR workshop	A & N Islands
15-16 May 24	M-SAR workshop	A & N Islands
19-21 Jun 24	20th M-SAR Refresher Course	CATC Prayagraj
27 Jun 24	M-SAR workshop	Goa

DG SHIPPING ORDERS / MS NOTICE / CIRCULAR

1. Amendments to Chapter V-Safety of Navigation under the International Convention for the Safety of Life at Sea, 1974 (SOLAS), and its applicability (DGS Order 25 of 2023)

https://www.dgshipping.gov.in/writereaddata/ShippingNotices/20231222051241457857 3Order25of2023.pdf

2. Amendments to Chapter IV- Radio communications under the International Convention for the Safety of Life at Sea, 1974 (SOLAS), and Its applicability (DGS Order 24 of 2023)

https://www.dgshipping.gov.in/writereaddata/ShippingNotices/20231222051150173752 8Order24of2023.pdf

3. Amendments to Chapter VI- Carriage of Cargo of the International Convention Safety of Life at Sea, 1974 (SOLAS), and its applicability (DGS Order 23 of 2023)

https://www.dgshipping.gov.in/writereaddata/ShippingNotices/20231222051107476992 3Order23of2023.pdf

4. Amendment to International Convention for the Safety of life at Sea, 1974, as modified by the protocol of 1988 relating to chapter III thereto and its applicability (DGS Order 21 of 2023)

https://www.dgshipping.gov.in/writereaddata/ShippingNotices/20231214105621531054 3OrderNo21of2023.pdf

5. Casualty Investigation Code and its applicability (DGS Order 20 of 2023)

https://www.dgshipping.gov.in/writereaddata/ShippingNotices/20231228125223007182 1DGSOrder20of2023finalversion.pdf

6. International Code of Safety for High-Speed Crafts and its applicability (DGS Order 19 of 2023)

https://www.dgshipping.gov.in/writereaddata/ShippingNotices/20231211110623320779 6DGSOrderNo19of2023.pdf

7. Constitution of Crisis Management and Reaction Group (DGS Order 10 of 2023)

https://www.dgshipping.gov.in/writereaddata/ShippingNotices/20230814115658674895 8DGSOrder10of2023.pdf

8. Usage of Thurava Iridium and other such Satellite Communication in Indian Waters (DGS Order 09 of 2023)

https://www.dgshipping.gov.in/writereaddata/ShippingNotices/20230712052139417916 7DGSOrderNo09of2023.pdf

Innovations in Search and Rescue Technologies
A Glimpse into the Latest Advancements

Search and Rescue operations play a crucial role in saving lives during emergencies, disasters, and critical situations. With advancements in technology, the capabilities of Search and Rescue teams have expanded significantly. In this article, we explore the latest technologies that are revolutionizing Search and Rescue efforts, enhancing efficiency, and ultimately saving more lives.

Drone Technology

Drones have become indispensable tools in Search and Rescue missions. Equipped with high-resolution cameras and infrared sensors, they provide aerial views of vast areas, helping teams locate missing persons or assess disaster-stricken regions. Real-time video feeds aid in quick decision-making and improve the overall effectiveness of Search operations.

AI and Machine Learning

Artificial Intelligence (AI) and machine learning algorithms are making a significant impact on Search and Rescue. These technologies can analyse large datasets to identify patterns, predict potential locations, and optimise Search strategies. AI-driven image recognition also aids in quickly identifying individuals in varying conditions, from different angles and distances.

Augmented Reality (AR) and Virtual Reality (VR)

AR and VR technologies are being integrated into Search and Rescue operations to enhance situational awareness. Rescuers can use AR overlays on smart glasses to access real-time information, maps, and guidance, improving navigation and communication in challenging environments. VR simulations are also used for training purposes, allowing teams to practice in realistic scenarios.

Wearable Technology

Advancements in wearable devices contribute significantly to the safety of both rescuers and those in distress. GPS-enabled smart watches, for instance, provide real-time location tracking, ensuring that Search teams can precisely locate and reach individuals in need. Additionally, vital signs monitoring through wearables can provide crucial health information for timely medical assistance.

Robotics and Unmanned Vehicles

Robotic systems and unmanned vehicles are increasingly employed in hazardous terrains where human access is difficult. Search and Rescue robots can navigate through rubble, debris, or unstable environments, reaching areas that might be unsafe for human responders. These machines can carry out tasks such as delivering supplies, assessing structural integrity, or even extracting individuals from confined spaces.

Communication Technologies

Efficient communication is paramount in Search and Rescue missions. Advances in communication technologies, such as satellite communication, mesh networks, and encrypted channels, ensure that Rescue teams stay connected even in remote or disaster-stricken areas. Portable and resilient communication systems play a vital role in coordinating efforts and relaying critical information. As technology continues to evolve, so does

the effectiveness of Search and Rescue operations. The integration of drones, AI, AR, wearables, robotics, and advanced communication tools has transformed the way rescuers approach their missions. These innovations not only improve response times but also enhance the overall safety and success rates of Search and Rescue efforts, ultimately contributing to saving more lives in critical situations.

- *Commandant (JG) Neetu Singh CGAE (PBR)*

Safe Waters at Sea : Key Recommendations for Offshore Establishment Search and Rescue along the Indian Coast

The expansive waters along the Indian coast host a myriad of offshore establishments, from oil rigs to renewable energy installations. Ensuring the safety of these vital structures requires a strategic and proactive approach. The following measures will enhance the efficacy of SAR operations around offshore establishments.

Geospatial Mapping and Navigation Support

Recommendations include leveraging geospatial mapping and navigation technologies to enhance precision in SAR operations. Integrating GPS-guided systems with detailed offshore establishment maps ensures accurate location identification during emergencies, reducing response times and increasing the effectiveness of Rescue efforts.

Regular Training Exercises

Regular and realistic training exercises are essential to prepare SAR teams for diverse scenarios. Recommending frequent joint drills involving the Indian Coast Guard, offshore industry personnel and other relevant stakeholders helps improve coordination and ensures that all parties are well-versed in emergency response protocols.

Collaborative Partnerships

Encouraging collaborative partnerships between the Indian Coast Guard, offshore industries, and international SAR entities is crucial. Developing Memoranda of Understanding (MoUs) and sharing best practices enhance information exchange, resource pooling, and mutual support, fostering a stronger safety net for offshore establishments.

Technological Integration

Advocating for the integration of cutting-edge technologies such as unmanned aerial vehicles (UAVs) and artificial intelligence into SAR operations is essential. These innovations can provide enhanced situational awareness, assist in swift decision-making, and optimize resource utilization, thereby elevating the overall efficiency of offshore establishment Rescue efforts.

Standardised Communication Protocols

Recommendations include the establishment of standardized communication protocols to ensure seamless coordination during SAR operations. Clear and consistent communication channels among SAR teams, offshore

establishments, and relevant authorities streamline information flow, facilitating a more organized and effective response to emergencies.

Regular Safety Audits

Encouraging routine safety audits for offshore establishments helps identify potential risks and vulnerabilities. Recommendations include periodic assessments of equipment, infrastructure, and emergency response plans to ensure that they align with evolving safety standards and technological advancements.

In conclusion, as the guardians of the Indian coast strive to fortify the safety net around offshore establishments, these recommendations serve as a guidepost for a comprehensive and proactive approach to SAR operations. By integrating advanced technologies, fostering collaboration, and prioritizing preparedness, thorough vigilance, collaboration, and forward-thinking strategies, the Indian Coast Guard remains at the forefront of maritime safety, ensuring that the seas surrounding the Indian subcontinent are not only productive but also secure for generations to come.

- *Asst Commandant Shardul Sahi*
ICGS Veraval

Wide Area Motion Imagery (WAMI) usage in SAR

During SAR operations Search and Rescue Units have to scan a huge area to locate survivors in water. Such survivors may be sheltered in small life rafts or in water, either swimming or floating with or without life jackets. Locating an individual survivor at vast sea expanses poses a huge challenge. To cover a large area generally airborne search units are tasked due to advantages of high speed and capability to oversee a large area. However the high altitude may lead to survivors being missed in such cases. To overcome this problem, WAMI systems may be used.

Wide Area Motion Imagery (WAMI) is an airborne Optical Intelligence, Surveillance, and Reconnaissance (OISR) data gathering system that combines multiple advanced sensor and processors into one integrated unit

capable of detecting and tracking every object (moving or stationary) within a large area and compiling the data into a single real time image or video. WAMI systems may be compared with a spider with eight eyes, the only difference is WAMI system have a collage of cameras, each overseeing a small sector and feed from all cameras is combined to form a picture which represents the area. Combining the capabilities of WAMI systems with Artificial Intelligence and computer model can greatly enhance the probability of locating a survivor at sea.

WAMI systems fitted on an aircraft, coupled with Radar technology, Infra-red detection and cloud penetrative radar can greatly augment the Search operations. With advancements in technology, camera sensor has shrunk in size and can easily be mounted on drones. WAMI systems have already shown its capabilities in Traffic management and crime recognition in major cities of the world. The adoption of system in maritime world can surely augment the Search and Rescue capabilities of Indian Coast Guard by generating detailed pictures of a large area to ensure no area remains unscrutinised.

- *Bhim Singh, U/Nvk (RP)*
MRCC Port Blair

Navigating the High Seas: Legal Frameworks and Regulations in Maritime Search and Rescue

Introduction

Maritime Search and Rescue (SAR) operations play a vital role in ensuring the safety of seafarers and preserving human life at sea. The International Maritime Organization (IMO), a specialized agency of the United Nations responsible for regulating shipping, has established a comprehensive legal framework for SAR activities. This article explores the essential aspects of the Law on Maritime Search and Rescue, as published by the IMO, delving into the international regulations that govern these critical operations.

The IMO's Mandate

The IMO, through its International Convention on Maritime Search and Rescue (SAR Convention), provides a globally recognized legal framework that sets out the obligations of nations to coordinate and conduct SAR operations. The convention, adopted in 1979 and amended in 2004, establishes the foundation for a collaborative approach to maritime safety and SAR activities worldwide.

Key Provisions of the SAR Convention

- **Responsibilities of Contracting States.** The SAR Convention outlines the responsibilities of Contracting States to establish and maintain effective SAR services within their respective Search and Rescue Regions. This ensures that nations take the necessary measures to respond promptly and efficiently to incidents within their territorial waters and areas of responsibility.

- **Coordination and Cooperation.** The legal framework emphasizes the importance of coordination and cooperation among Contracting States in SAR operations. This includes the exchange of information,

joint exercises and the establishment of Rescue Coordination Centres to enhance the effectiveness of Search and Rescue efforts.

◈ **Establishment of Rescue Coordination Centres (RCCs)**. Contracting States are required to establish RCCs to coordinate and control SAR operations within their designated regions. These centres serve as focal points for communication, decision-making, and resource allocation during SAR missions.

◈ **Communication and Information Sharing.** The SAR Convention highlights the significance of effective communication and information sharing among Contracting States. Timely exchange of relevant data, including details about distress incidents and available resources, is crucial for the success of SAR operations.

◈ **Aeronautical and Maritime Search and Rescue (AMSAR) Plan**. Contracting States are encouraged to develop and maintain an Aeronautical and Maritime Search and Rescue plan to guide their SAR activities. This plan, in accordance with the SAR Convention, serves as a blueprint for coordinating resources and responding to distress situations.

◈ **Training and Exercises**. The legal framework places importance on the training of personnel involved in SAR operations. Contracting States are obligated to conduct regular exercises to ensure that their SAR services are adequately prepared to respond to emergencies effectively.

◈ **Protection of SAR Personnel**. The SAR Convention addresses the safety and protection of SAR personnel, emphasizing that those engaged in rescue operations should be granted the necessary legal protections to carry out their duties without undue hindrance or risk.

◈ **Non-Discrimination Principle**. The legal framework upholds the non-discrimination principle, ensuring that assistance is provided to anyone in distress at sea, regardless of their nationality or status. This humanitarian aspect reinforces the universal commitment to preserving human life.

Conclusion

The Law on Maritime Search and Rescue, as established by the IMO through the SAR Convention, serves as a cornerstone for international cooperation and coordination in addressing distress incidents at sea. This legal framework not only delineates the responsibilities of Contracting States but also emphasizes the humanitarian principles that underlines SAR operations. As the maritime landscape continues to evolve, it is imperative for the legal framework to adapt to emerging challenges, technological advancements, and changing dynamics, ensuring that the safety of seafarers remains at the forefront of global maritime efforts. The ongoing commitment to refining and reinforcing these regulations ensures that the high seas remain navigable with the reassurance that help is never far away.

References:-

Organisation, I. M. (1979). International Convention on Maritime Search and Rescue. International Convention on Maritime Search and Rescue. Hamburg: United Nations.

- *Asst Commandant Arighna Mukherjee*
ICGS Anmol

The Future of Search and Rescue
Advanced Technology Designed for a Safer Future

Introduction

Search and Rescue (SAR) is receiving a lot of attention recently due to several high-profile incidents on land, in the air and at sea. We've all heard about these incidents – a hiker lost in the wilderness, an airline disappearing, a fishing crew lost at sea, a recreational boating tragedy – and we wonder to ourselves, "With all the technology available today, how could this happen?" The answer to this question is a complex one. But, by understanding a few of the key SAR trends and emerging technologies, we can get a clearer picture of the future of SAR. Here are the Top 5 SAR ideas and concepts on the horizon that will help to make a crucial, life-saving difference in emergency situations in the very near future.

MEOSAR

The Next-Generation Satellite-Aided Search and Rescue System, the Cospas-Sarsat international satellite SAR system has been instrumental in helping to save nearly 40,000 lives by pinpointing the location of emergency distress beacon signals. For instance, in 2014, there were nearly 700 SAR incidents assisted by COSPAS-SARSAT resulting in over 2,300 people rescued. The next-generation version of COSPAS-SARSAT, known as MEOSAR (or Medium Earth Orbit Search and Rescue), is expected to revolutionize the entire SAR process when fully deployed in the next 3-5 years. MEOSAR will include global satellite coverage and near-instantaneous distress beacon detection (72 MEOSAR satellites vs. 12 today), more accurate beacon location calculations (by using 6 MEOSAR ground station antennas) and a unique Return Link Service feature that confirms receipt of the distress signal. With MEOSAR, a distress beacon can be located within 100 meters (328 feet), 95% of the time, and within 5 minutes instead of taking up to several hours today. Several countries are already using or implementing MEOSAR systems including two of the world's most active SAR regions – the U.S. and, as announced recently, the Southern Asia Pacific Region of Australia/New Zealand.

Advanced Data Recording Devices

Data recording devices such as Flight Data Recorders (FDRs) or Cockpit Voice Recorders (CVRs) in aviation and Voyage Data Recorders (VDRs) in maritime will play a much larger role in the storage, retrieval and analysis of aircraft / vessel information. Several ideas are being considered by aviation organizations and manufacturers which entail making FDRs and CVRs deployable or ejectable before a crash while integrating distress beacon technology to make them more easily located outside of the accident zone or floating on water. Similar concepts are being considered for VDRs so that they can be found more rapidly in maritime incidents.

Vessel Tracking and Monitoring -Activated by Triggers

Continuous vessel tracking and monitoring is another concept that has been discussed at length lately by industry organizations and regulatory bodies such as ICAO (aviation), IMO (maritime) and others. Several industry initiatives including GMDSS (Global Maritime Distress and Safety Systems) and GADSS (Global Aviation Distress

and Safety Systems) are proposing to send position data of a plane or a ship every few minutes, not necessarily continuously. If a critical situation is detected onboard, then location and vessel data is automatically triggered to be sent more frequently, for example, every minute or every few seconds. This data could then be reviewed in real-time by air traffic control, fleet operators or other personnel who could provide real-time guidance to the pilot, captain or crew.

Drones - The Emerging Life Savers

Unmanned Aerial Vehicles (UAVs) or drones are taking a more prominent role in SAR operations. Drones are being used as the “first response” to analyze accident scenes, determine emergency routes and locate potential survivors. A demonstration of a drone flying to an emergency location in the ocean and then dropping life preserver rings directly to people in distress was witnessed at recently conducted World Maritime Rescue Federation Conference. Another concept showed an unmanned rescue raft maneuvering to a location, “scooping up” people from the ocean then transporting them to medical stations.

Safety Wearables and Gear - Beacon-Embedded Devices and Clothing

Currently, there are an estimated 1.4 million distress beacons registered in the world, but this is a small percentage of the total number of boaters, sailors, hikers, campers and pilots globally. To help increase this percentage, several companies are working together to integrate distress beacon technology into the actual safety devices and clothing. In the future, we will see more examples of beacon technology embedded into life rafts, life vests, flight suits, watches and outerwear. With outdoor sports gaining popularity and given the recent incidents mentioned, we will see a rise in the use of these emergency-ready, location-enabling, wearable safety devices.

Technology Ushers in a New Era of Search and Rescue

In the world of Search and Rescue there is one primary mission: Saving Lives. Today’s SAR systems are highly effective, as evidenced by the number of people saved by COSPAS-SARSAT. Technology improvement across the entire SAR ecosystem over the next few years, especially to the SAR satellite network, will dramatically improve the safety of maritime personnel, aviators and recreationists around the globe, allowing rescuers to locate those in trouble almost instantaneously. As the awareness and understanding of SAR increases, a number of breakthrough applications, innovations and procedures will emerge to save even more time, more costs and, most importantly, more lives.

- *Appalaraju, Nvk(RP)*
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Safe Waters

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