



Safe Waters

NEWSLETTER

On Maritime Safety and Security

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



The Indian Ocean Region continues to be at the centre stage of global maritime trade with ever increasing maritime traffic and oceanic developments. This entails requirement of an efficient maritime search and rescue architecture so as to provide timely succor to the seafarers. As we collectively tide over the challenges of mounting SAR requirements due to notable impetus on shipping, fishing and ancillary infrastructure along the Indian coast, a collaborative and sustained approach towards resources integration and capacity building is inescapable for efficient provision of search and rescue operations at sea.

The year 2017 was challenging for search and rescue operations as the sheer number of persons in desperate need of rescue at sea was unprecedented, particularly during the severe Cyclone 'Ockhi'. However, I place on record the excellent collective efforts put in by NMSARB members and each resource agency in extending prompt search, rescue and relief services to stranded fishermen at sea during the Cyclone's catastrophic period. The well designed SAR plan coupled with prompt and coordinated response not only resulted in the rescue of 850 fishermen at sea but also facilitated an unprecedented Humanitarian Assistance and Disaster Relief effort to thousands of stranded fishermen facing nature's fury.

However, I must bring out that lack of critical life saving gear and communication equipment, including low cost Distress Alert Transmitter onboard fishing boats continues to be the weakest link in the SAR mechanism in Indian waters. Even though Indian Coast Guard, Indian Navy, State Fisheries and other departments are making all out efforts to sensitize fishermen by way of regular Community Interaction Programmes on safety and survival criticalities, I would urge all NMSARB members and agencies to collectively stride towards enhancing awareness of safety of life at sea amongst the coastal populace.

Enhanced exchange of information between neighbouring MRCCs through SAR Communication exercises has strengthened the regional SAR capabilities in the Indian Ocean Region. Further, on the national front, the signing of MoU between MRCC (Mumbai) and RCC (Mumbai) in Dec 2017 has reinforced unwavering maritime and aeronautical SAR integration at sea.

I am confident that support from all agencies and stakeholders will always be forthcoming towards ensuring safety of life and property in the vast Indian Search and Rescue Region. I am sanguine that this publication in its new format will be appreciated by our enthusiastic readers.

"Vayam Rakshamah." Jai Hind

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

From the Editor's Desk

Rapid ocean led developments alongwith increasing maritime traffic in Indian waters demand an effective maritime SAR mechanism. India, since ratification of M-SAR Convention of 1979, has come a long way in terms of establishing a robust search and rescue apparatus in Indian waters.

Active participation and unrelenting cooperation of NMSAR Board members has been a hallmark of synergized approach towards strengthening of India's maritime SAR capabilities in recent years.

The record number of lives saved at sea in the year 2017 is testimony to the budding synergy and collective efforts of maritime SAR agencies. The well designed SAR plan and its efficient execution during the Cyclone 'Ockhi' catastrophe, which formed off south Tamil Nadu coast on 30 Nov 17, resulted in record rescue of 850 fishermen stranded at sea. In an unprecedented large scale SAR operation launched by ICG wef 30 Nov 17, Search and Rescue Units of various agencies braving inhospitable sea conditions reached out to every fisherman/mariner and provided timely succor.

The contents of this edition of Newsletter have been revised with incorporation of IMO News, Circular and global developments in field of maritime SAR. A Copy of Circular encouraging use of 'Beacon Testers' and updated Indian SAR Point of Contact (SPOC) has also been included.

I thank all NMSAR Board members and their representatives for their constant support and look forward for valuable feedback to this Newsletter.



(Arun Singh)
Commandant
Joint Director (SAR)

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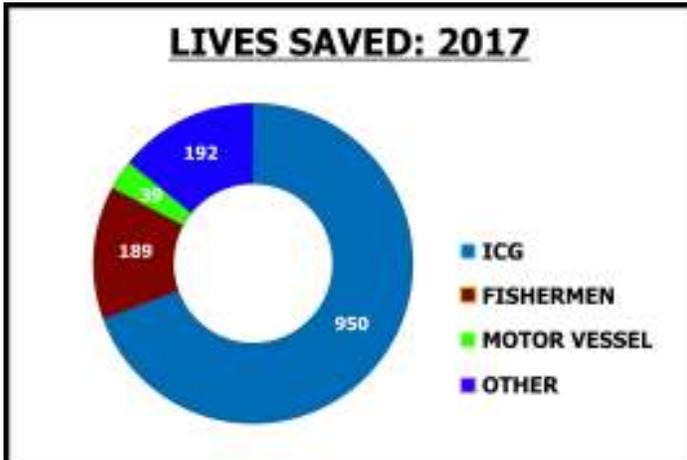
'Safe Waters'

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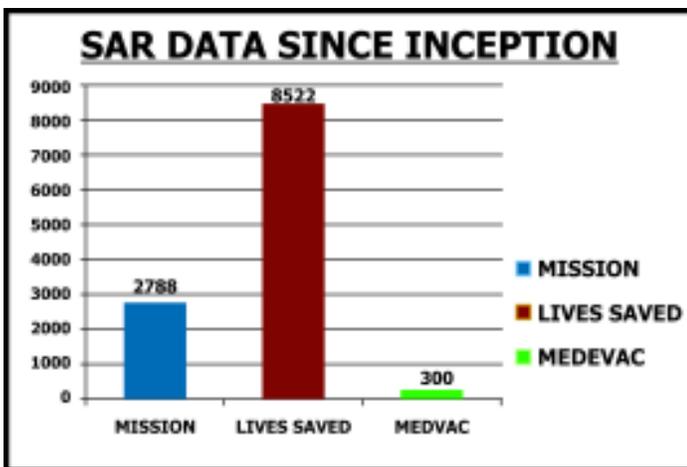
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SAR DATA

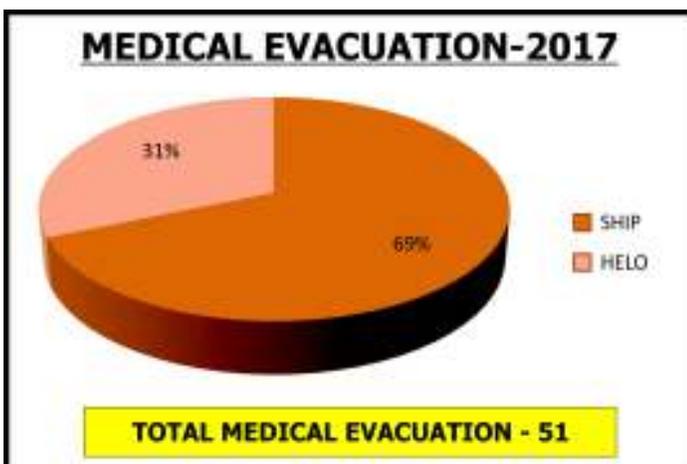
Graph below indicates lives saved by ICG, Fishermen, Motor Vessel and other resource agencies during 2017.



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



Given below is the medical evacuation undertaken by Indian Coast Guard ships and aircraft in the year 2107.



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 13th exercise of the series was conducted on 21-23 Nov 17 which witnessed active participation from both defence and civil agencies. A total of 20 Beacons were tested live and the 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 MRCC/ RCC, the SAR Communication Exercise (SARCOMEX) were conducted more frequently during Aug-Dec 17 as follows:-

- (a) MRCC, Colombo (Sri Lanka) & MRCC, Chennai - 26 Oct 17
- (b) MRCC, Yangon (Myanmar) & MRCC, Chennai - 03 Nov 17
- (c) RCC (West) Mokpo (S. Korea) & MRCC, Mumbai on 08 Nov 17
- (d) MRCC Philippines (Philippines) & MRCC, Port Blair on 10 Nov 17
- (e) RCC Nagoya (Japan) & MRCC, Port Blair on 07 Dec 17
- (f) JRCC Australia (Australia) & MRCC, Mumbai on 15 Dec 17

SAR NEWS **(Aug 17 - Dec 17)**

Assistance to Fishing Boats off West Bengal Coast

On 05 Aug 17, ICGS Anmol, whilst on patrol, received distress alert on VHF channel 16 from two fishing boats - Maa Sandha with 12 crew, and Jay Krishna with 11 crew, adrift in position 62 N miles South of Sagar Island due to engine failure.



Towing Assistance to 'FB Jay Krishna'

The ship rushed to the area and located both the stranded fishing boats and arranged nearby fishing boat in vicinity to render towing assistance to Maa Sandha while she prepared to tow the fishing boat Jay Krishna which had its nets entangled with the propellers. Post clearing of the nets, the Coast Guard ship towed the fishing boat for a distance of 50 N miles towards Haldia harbour. The ship reached the harbour by midnight hours and assisted the boat to anchor for being taken over by the owner.

Rescue of Fishermen off Porbandar

On 01 Sep 17, the Aviation Squadron at Porbandar received a distress signal intimating that 08 fisherman ex-FB Mayur Sagar were stranded off Porbandar for more than 24 hours view engine malfunction amidst prevailing cyclonic weather.



Rescue of survivors by Helicopter

The boat was stuck in shallow waters and rescue by any ship/ boat was nearly impossible. ICG Advanced Light Helicopter, based at Porbandar, was launched for SAR mission. Despite extreme weather conditions and cyclonic winds, the air crew safely rescued all the stranded 08 fishermen of the ill fated boat in repeated attempts. All the survivors were thereafter safely disembarked to the nearest coast for further medical assistance by the Coast Guard shore authorities. Post first aid, the fishermen were handed over to fisheries authorities.

MEDEVAC from 'MT Beijing 2008'

At about 2155 Hr on 16 Sep 17, ICGS Rani Avantibai, while on patrol, received a distress message from MT Beijing 2008 regarding medical



MEDEVAC from 'MT Beijing 2008'

emergency of a Filipino crew suffering from severe appendicitis. The merchant vessel was transiting from Haldia to Brazil and raised distress alert when in position 190 N miles East of Vizag.

On receipt of message, ICG ship immediately established communication with MT Beijing 2008 and effected rendezvous with maximum speed. The ship embarked the casualty onboard at 0530 Hr on 17 Sep 17 and handed over to local agent at Vishakhapatnam for further medical management.

[Assistance to Adrift Tourist Boat off Puducherry](#)

At about 1845 Hr on 17 Sep 17, ICGS Puducherry received information from Pondy Nautic Tourism Group regarding drifting of a tourist boat due to engine failure 12 N miles off Puducherry. The tourist boat had sailed at about 0800 Hr, with 18 tourists, and was due to return harbour at 1700 Hr on the same day. Availability of assistance during dark hours was not certain from other sources. Despite the prevailing rough weather (sea state 3-4, winds gusting upto 35 Kmph) and poor visibility conditions in area, Indian Coast Guard Interceptor Craft IC-119 was sailed at 2000 Hr on 17 Sep 17 for SAR despite the limitations on navigational channel due to dredging operation and limited navigational aids.



Tourist Boat under tow by ICGS IC-119

IC-119 navigated through the restricted channel in absence of navigational lights and adverse weather conditions and reached the distressed boat at 2315 Hr on 17 Sep 17. IC-119 rescued all 12 tourists present onboard the distressed boat and embarked them onboard. 06 tourists from the same boat were rescued earlier by a fishing boat operating in the area around 2030 Hr on 17 Sep 17. IC-119 thereafter, entered Puducherry harbour safely with all rescued tourists in the wee hours of 18 Sep 17.

[MEDEVAC from 'MV Paola Bottiglieri'](#)

At about 1140 Hr on 27 Sep 17, Maritime Rescue Coordination Centre, Port Blair {MRCC (PBR)} received request from MV Paola Bottiglieri for medical evacuation (MEDEVAC) of a critically ill 56 years old Romanian crew suffering from diabetes mellitus with suspected gangrene foot. The vessel, enroute to Kakinada, was 130 N miles SW of Port Blair. The vessel was directed to head towards Port Blair while ICGS Rajveer was immediately deployed with Medical Team for early evacuation. ICGS Rajveer evacuated the ill crew of MV Paola Bottiglieri at 2315 Hr and handed over to local agent at Port Blair in the wee hours of 28 Sep 17.



Evacuation Operation by ICGS Rajveer

Assistance to 'Barge Ellysia' off Mumbai

At 1500 Hr on 29 Sep 17, VTS Mumbai intimated MRCC Mumbai regarding flooding onboard barge Ellysia with 07 person onboard in position 05 N miles West North West of Mumbai. ICGS C-154 & ICGS Sankalp, both on patrol, were immediately diverted for assistance. At 1525 Hr, ICGS C-154 arrived area and disembarked de-flooding party onboard barge Ellysia. However, attempts of de-flooding were futile and subsequently terminated due to heavy rolling of vessel and unavailability of power onboard barge. Consequently, all 07 crew were evacuated safely by ICGS C-154. The vessel was also made to anchor to prevent grounding. Subsequently, engine room was isolated.



*Rescue of crew from 'Barge Ellysia'
by ICGS C-154*

At 1648 Hr, Emergency Towing Vessel SCI Panna was deployed by DG Shipping for assistance while Tug Dolphin-5, arranged by owner, also arrived on scene at about 1945 Hr. Tug Dolphin-5 commenced towing barge Ellysia at 2100 Hr and brought it safely to Darukhana, Mumbai Port Trust. All the rescued crew were safely landed ashore by ICG ship.

MEDEVAC from 'MT Falcon Victory'

At 1845 Hr on 14 Nov 17, MRCC (Port Blair) received request from MT Falcon Victory for urgent medical evacuation of a 41 year old Indian crew who had sustained injury with amputated fingers. The vessel, at the time of reporting of medical emergency, was 360 N miles south west of Port Blair. The vessel was advised to head towards Port Blair while ICGS C-146 was deployed for assistance and evacuation. The ill crew was evacuated by Coast Guard ship at midnight hours and brought to Port Blair at 0145 Hrs on 16 Nov 17 for further treatment.



MEDEVAC by ICGS C-146

Rescue of Fishermen off Jakhau

ICGS Samudra Pavak, whilst on patrol on 20 Nov 17, received a distress message from a fishing boat at 1030 Hr regarding flooding on board IFB Kalyaneshar.

The distress position was about 42 N miles west of Jakhau, Gujarat. ICGS Samudra Pavak immediately proceeded to the area and found that IFB Kalyaneshar was heavily flooded, partially submerged and also listed 20°-30°.

The fishing boat crew was not aware of the

source of the water ingress. As the Coast Guard team was about to initiate the de-flooding arrangements, the boat capsized and sank at 1250 Hr due to excessive flooding. All the 06 crew were rescued and embarked onboard ICG Ship. The rescued crew were provided first aid and food.



Rescue of fishermen from capsized boat

Subsequently, the Coast Guard ship safely brought the 06 rescued crew to Porbandar.

SAR Operations off Vizhinjam

Consequent to deep depression off South Tamil Nadu coast intensifying into cyclonic storm 'Ockhi' on 30 Nov 17, Indian Coast Guard Ship C-427 on routine patrol observed calls of distress from various fishermen stranded in their fishing boats facing extreme weather conditions. The ship's crew sighted a country boat with one fisherman stranded in it and requesting immediate rescue. The ship rescued the fishermen after multiple attempts from the capsizing fishing boat. While the rescue operation was in progress, ICGS C-427 located another distressed fishing boat 'Arokia Mary' with 08 fishermen adrift due to engine failure. Post concerted efforts, the ship rescued all the 08 fishermen. ICG ship further assisted sinking fishing boat 'Herman Mary' and rescued another

08 fishermen at sea. The ship also provided towing assistance to two fishing boats, drifting dangerously towards coast on 01 Dec 17 and saved lives of total 38 fishermen off Vizhinjam coast between 30 Nov-02 Dec 17, when the Cyclone fury was at its peak.

SAR Operation by ICGS Aryaman

At about 1205 Hr on 02 Dec 17, ICGS Aryaman while on patrol, received message regarding two boats in distress in position 75 N miles west of Kochi. The ICG Ship immediately proceeded towards the distressed boats despite prevailing very rough sea conditions. Meanwhile, ICG Dornier aircraft located the distressed boat and vectored ICGS Aryaman towards the fishing boats (FB) 'Arokiya' and 'Bible'. On interrogation, it revealed that the FB Bible had major machinery breakdown while FB Arokiya was having minor defect in propulsion. ICGS Aryaman took FB Bible, with 10 crew, under tow and also escorted FB Arokiya, with 09 crew, towards harbour for safety.



Towing assistance by ICGS Aryaman

The ship reached off Manakkodam by 1100 Hr on 03 Dec 17 and both the boats were safely handed over to Fisheries Department, Ernakulam.

Assistance to Fishermen off Sagar Island

At about 1200 Hr on 02 Dec 17, ICGS Anmol on patrol received a distress call on VHF channel from fishing boat 'Baba Ashirwad' in position 70 N miles East southeast of Sagar Island.

Precise search plan by the ICG ship's staff resulted in timely location of the stranded fishing boat. On investigation, it revealed that boat, with 11 crew onboard, was adrift for past 06 days without food, water and non-operational engine due to crack in lube oil cooler. Ship's technical team made attempts to carry out defect rectification. However, the large crack near the collar of lube oil pipeline couldn't be repaired. Thereafter, ICG Ship towed the boat till WP-4 western channel and was made to anchor for repairs arrangements by the owner.



Towing assistance by ICGS Anmol

Rescue of Fishermen off Beypore

ICGS Abhinav, whilst searching for stranded boats off Kerala coast during Cyclone Ockhi, received input from Coast Guard Dornier aircraft regarding a stranded fishing boat off Beypore. The Ship located the distressed boat at 1330 Hr on 03 Dec 17 and observed that FB 'Jewel', with 05 fishermen, was stranded due to machinery failure. It also revealed that the fishermen were

starving from last 05 days view lack of food and water. The fishermen were rescued and provided food and first aid and thereafter handed over to the Marine Enforcement Wing staff off Beypore at 1530 Hr on 03 Dec 17.



Asistance to 'FB Jewel' by ICGS Abhinav

Assistance to Fishermen off Suheli Par Island

At 0630 Hr on 03 Dec 17, ICGS Shoor sighted one stranded fishing boat at Suheli Par island in Lakshadweep group of islands. Ship's landing party was dispatched despite rough sea and strong wind conditions prevalent due to Cyclone 'Ockhi'.



Rescue of Fishermen by ICGS Shoor

All the four fishermen were taken onboard by the landing party at 1015 Hr and provided first aid and food. Interrogation revealed that the fishing boat had

drifted and subsequently grounded at Suheli Par Island on 02 Dec 17 due to shearing off the propeller and cyclonic weather. The boat had sustained damages in hull and engine room with water ingress and hence abandoned by the crew who took shelter on the uninhabited Island. The rescued fishermen were later handed over to ICGS C-421 off Kavaratti Island.



Rescue of Fishermen off Suheli Par Island

Assistance to Fishing Boat off Bitra Islands

Consequent to assistance to one fishing boat, ICGS Shoor proceeded to provide towing assistance to another distressed fishing boat 'St Damian' in position about 155 N miles west of Bitra Island. The stranded boat, with 13 crew onboard, was located at 1445 Hr on 06 Dec 17. The boat was adrift due to engine defect and repair at sea was not feasible due to major defect and want of spares. Crew of the fishing boat were provided with food/ water and warm clothes while one crew suffering from suspected hyper dermatitis was provided requisite medical aid. The ICG ship thereafter towed the fishing boat to reach Kavaratti at 2030 Hr on 07 Dec 17 for handing over to local administration.

Rescue of Fishermen off New Mangalore

At about 1130 Hr on 07 Dec 17, Coast Guard Dornier aircraft reported sighting of a stranded boat

in area. ICG Ship Abhinav was directed to proceed and located the stranded fishing boat 'Thiruchiluvai' in position 115 N miles Southwest of New Mangalore at 1130 Hr on 07 Dec 17. The boat was taken alongside and was provided with medical facility, food and water. It revealed that the boat crew was starving with no provisions and water for last 07 days. The fishing boat was thereafter safely escorted towards Kochi harbour.

Assistance to Fishing Boat off Jaigarh

On receipt of information regarding a Karnataka registered fishing boat 'Star Fish (Bahubali)' adrift due to machinery breakdown in approx position 15 N miles South-west off Jaigarh with seven crew onboard, Coast Guard District HQ-2, Mumbai deployed ICGS C-402 from Murud harbour at 1700 Hr on 15 Dec 17 for search and assistance.

ICGS C-402, with best speed, arrived the reported area at 2215 Hr and established communication with the vessel to find its exact position. After moderate search, the boat was located at 2300 Hr with major machinery defect. Since the fishing boat's engine could not be repaired at sea view want of spares, the boat was taken under tow by ICGS C-402 and safely brought to Murud harbour amid dark hours and rough sea conditions.



Night Towing assistance by ICGS C-402

DGCA CIRCULAR ON USE OF BEACON TESTERS

GOVERNMENT OF INDIA
CIVIL AVIATION DEPARTMENT

OFFICE OF THE

DIRECTOR GENERAL OF CIVIL AVIATION

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महानिदेशक नागर विमानन का कार्यालय
सफदरजंग एयरपोर्ट के सामने
नई दिल्ली - ११० ००३

Reference No. : संख्या : 11-690/AAC-1/2015-AI (2)

Dated : दिनांक : 16.01.2018

To

Deputy Director General of Civil Aviation,
Delhi/Mumbai/Kolkata/Chennai/Bengaluru

Deputy Director of Airworthiness,
Lucknow/Bhopal/Patna/Bhubaneswar/Guwahati/Hyderabad/Kochi

Assistant Director of Airworthiness,
Kanpur/Patiala

Subject :- Use of Beacon Testers for testing of 406 MHz Beacons

The COSPAS-SARSAT system has switched to 406 MHz since 01 Feb 2009 and Indian Mission Control Centre (INMCC) Bangalore provides data exchange with COSPAS-SARSAT system and disseminates the alert to associated MRCCs/RCCs.

Activation of 406 MHz Beacons in operational mode, even for a short duration, will generate COSPAS-SARSAT distress alert messages and will be relayed to the SAR services for immediate action. Regardless of the Beacons location or the duration of activation, 406 MHz Beacon will be detected by at least one GEOLUT and it might also be detected by every LEOLUT in the system. The resulting distress alert message will be routed to every Mission Control Centre (MCC) in the COSPAS-SARSAT system. Consequently, a great deal of coordination is required to ensure that all MCCs throughout the world are aware of test transmissions from beacons in their operational mode and that they have programmed their equipment to respond accordingly. Therefore, 406 MHz Beacons should not be activated except in real distress situation for unless special prior arrangements have been made with the COSPAS-SARSAT Mission Control Centre (MCC) in the region. **Hence, Live testing of 406 MHz distress Beacons is not recommended and is to be avoided.**

The 406 MHz beacons have provision of 'Self-Test Mode' which ensure its functionality, if successful. Additionally, testing of beacon may be undertaken using commercially available 'Beacon Testers' to avoid 'Live testing' of beacons. The 406 MHz beacon testers enable testing of various types of maritime emergency radio beacons that operate in COSPAS-SARSAT system. A beacon tester can receive the transmission from 406 MHz COSPAS-SARSAT beacons transmitting either in test mode or in real alert emergency mode.

Airworthiness Advisory Circular No. 1 of 2015 details the various aspects of ELT 406 including testing, emission of actual signals, inadvertent signal transmission etc.

In view of above, it is advised that the above guideline of testing of ELT 406 and other aspects as detailed in the aforesaid AAC may be intimated to all concerned for their compliance.

(K.P. Srivastava)

Deputy Director General of Civil Aviation
For Director General of Civil Aviation

VERY SEVERE PICTORIAL ESSAY

by GK Verma, P/Adh(RO), PACG



(30 Nov 17) Fisherman rescued off Vizhinjam and provided medical assistance



(01 Dec 17) 5 fishermen rescued off Quilon in challenging weather conditions



(01 Dec 17) 3 fishermen rescued off Vizhinjam



(01 Dec 17) 9 ships and 2 Dornier aircraft deployed off Kerala and Tamil Nadu coasts. 52 fishermen rescued in 24 hours

Indian Coast Guard's search and rescue efforts amounted to 317 ship days and 255 flying hours



(02 Dec 17) 15 fishermen safely rescued at sea and disembarked off Vizhinjam and Quilon



(02 Dec 17) 3 fishermen from distressed vessel "Salaitthane" rescued 62 n miles off Quilon and administered first aid



(03 Dec 17) 5 fishermen rescued from distressed fishing vessel "Joyal" stranded 25 n miles off Bepore



(03 Dec 17) Assisted 23 Tamil Nadu fishing vessels sheltered at Miryabandar, Maharashtra

CYCLONE OCKHI OF ICG SAR EFFORTS

and Naresh Kumar, Adh(RO)



(04 Dec 17) 19 fishermen rescued in 2 fishing vessels stranded 96 n miles off Bitra Island in Lakshadweep



(05 Dec) Indian Coast Guard significantly enhances its search and rescue operations



(05 Dec 17) 184 fishermen in 15 distressed fishing boats rescued in Lakshadweep sea areas and provided medical assistance



(06 Dec 17) 12 fishermen rescued at sea and their stranded fishing vessel towed to safety

Indian Coast Guard's untiring efforts resulted in unprecedented SAR assistance and rescue of 488 fishermen



(06 Dec 17) 13 fishermen rescued 30 n miles off New Mangalore and their stranded boat towed to harbour



(07 Dec 17) 10 fishermen rescued 150 n miles off Bitra Island in Lakshadweep



(12 Dec 17) 23 fishermen provided medical aid 56 n miles off Ponnani and vessel towed to harbour



(12 Dec 17) Indian Coast Ship engaged in night time rescue operation in adverse weather conditions



INTERNATIONAL MARITIME ORGANISATION(IMO) NEWS

24th IMO/ ICAO Joint Working Group Meeting on SAR

The 24th meeting of International Civil Aviation Organisation/ International Maritime Organisation Joint Working Group on harmonization of Aeronautical and Maritime SAR was held at Wellington, New Zealand from 02-06 Oct 17. The meeting was chaired by Mr. D Edwards, United States and attended by SAR professionals from various countries.

The agenda of the meeting included developments in GMDSS satellite services, revised performance standards for EPIRB including COSPAS-SARSAT MEOSAR and second generation beacon, formulate guidelines on harmonized aeronautical and maritime SAR procedures including SAR training matters and amendment to IAMSAR manual I-III to be published in 2019. The JWG submitted its report to IMO for discussion during 5th IMO Sub-committee on Navigation, Communication and SAR in early 2018.

Cape Town Agreement - 2012 Towards Fishing Safety

IMO is in process of promoting ratification and implementation of 'Cape Town Agreement of 2012', a key fishing vessel safety treaty which will facilitate better control of fishing vessel safety by Flag, Port and Coastal States. It will also contribute to the fight against Illegal, Unregulated and Unreported (IUU) fishing menace.

The Cape Town Agreement was adopted at an international conference held in South Africa in 2012, as a means to bring into effect the provisions of the

1977 Torremolinos International Convention for the Safety of Fishing Vessels, which was later modified by the 1993 Torremolinos Protocol.

In its efforts to promote the Agreement for enhanced participation, the Cape Town Regional Seminar was conducted from 16-20 Oct 17 at Cape Town, Africa and was attended by participants from 10 countries in the Africa Anglophone region. It followed similar events organized by IMO in cooperation with the Food and Agriculture Organization (FAO) and other government and non-government organisations in recent years. Future seminars are planned to be held in further region(s) during 2018. Once ratified by requisite number of Parties and implemented, it is bound to make fishing a safer and more sustainable industry for maritime nations.

Concerns on Unsafe Migration at Sea and SAR Challenges

Unsafe migration at sea continues to claim lives at sea despite Navy/ Coast Guard rescue services rushing for rescue. It was reported that more than 2800 lives have been lost at sea till 30 Oct in year 2018 itself. To address the complexity of this humanitarian challenge, a meeting was hosted by IMO on 30 Oct 17 and attended by various international organizations from maritime industry including UN representatives. The challenges of rescuing large number of people in distress, providing food, shelter, sanitation, medical care are harrowing for rescue agencies.

While SAR efforts will continue to be obligatory during any eventualities at sea, it was deliberated that safe, legal pathway needs to be developed to prevent loss of life during unsafe migration. IMO proposed for enhanced collaboration by States and International organisations. The record of the

discussions will be fed into the Global Compact on Migration-a UN Member State led initiative towards addressing the migration issues.

IMO Endeavor for Worldwide Implementation of M-SAR

Worldwide implementation of IMO's International Convention on Maritime Search and Rescue (SAR Convention 1979) is a key component in efforts to ensure prompt safety of international shipping.

To further promote the ratification and appropriate implementation of the Convention, a seminar was held in Bogota, Colombia, from 14-16 Nov 17. The event was organized by IMO in collaboration with the General Maritime Directorate of Colombia (DIMAR). The seminar provided an opportunity for Search and Rescue authorities in Central America and the Caribbean to enhance their understanding of regional SAR issues and to learn about new technologies available.

The three-day workshop, which brought participants from over 20 countries in Central America and the Caribbean, encouraged participants to share best practices, establish common procedures and raise awareness of their national situation besides encouraging the implementation of SAR services efficiently and effectively.

Promoting Safety and Protecting of Seafarers in Polar Regions

With more and more ships navigating in polar waters, IMO has moved to address international concern about the protection of the polar environment and the safety of seafarers and passengers with the introduction of new regulations that all ships operating in these harsh and challenging waters must comply with. Impetus is being accorded towards awareness and implementation of the mandatory

Polar Code, for ships operating in Arctic and Antarctic waters which entered into force on 01 Jan 17.

Increasing Awareness on MEOSAR- the next SAR System

COSPAS-SARSAT system has been enabling emergency distress detection and location information through Leo & Geo Satellite constellations for more than three decades. The extant system is now undergoing transition to Medium Earth Orbiting SAR (MEOSAR) system which will add SAR capability to middle earth orbit. All maritime nations are in process of upgrading to MEOSAR system and second generation beacons.

International Maritime Organisation (IMO) and International Civil Aviation Organisation (ICAO) are encouraging member states to use series of short training videos produced by SAR professionals to improve understanding of the MEOSAR system and next generation beacon technology which are available on www.youtube.com/user/CospasSarsatProgram/playlists.

<u>Forthcoming SAR Related Meetings at IMO</u>		
SI	Meeting	Date
1.	Sub-committee on Navigation, Communications and Search and Rescue (NCSR) 5 th session	19-23 Feb 18
2.	Maritime Safety Committee (MSC) 99 th Session	16-25 May 18
3.	25 th meeting of ICAO/ IMO Joint Working Group on Search and Rescue	17-21 Sep 18

MISCELLANEOUS

ICG Participation in 1st Coast Guard Global Summit at Tokyo

A high level Indian delegation led by Director General Rajendra Singh, PTM, TM, Director General Indian Coast Guard participation in the 1st Coast Guard Global Summit jointly hosted by the Japan Coast Guard and Nippon Foundation, in Tokyo on 14 Sep 17. The International legal framework for SAR, the implementation of effective SAR systems, and the need for and benefit of international & inter-regional cooperation for effective SAR on a global basis were amongst the issues discussed in the summit.



Coast Guard Global Summit

Officials from more than 30 countries participated in the summit to discuss inter-regional cooperation and collaboration beyond existing bilateral and regional framework.

ARTICLES ON MARITIME SAFETY

Futuristic Unmanned System for Maritime Search and Rescue

Compiled by: ICGS Samudra Prahari

During maritime search and rescue operations, the safety of the rescuers is a major issue and must be ensured in any circumstance. SAR personnel/teams are reported to adapt, or even to suspend their operations due to external factors and conditions, such as lack of visibility or atmospheric and/or maritime adverse conditions. On the other hand, it is well established that rescue response time is a major factor for success in the SAR operations, due to the reduced survival time of victims at sea.

There have been numerous technological advancements in the field maritime search and rescue especially Man Over Board scenario and one such field is Robotics. These hi-tech assets can complement the role of search and rescue teams, as they can operate in dangerous scenarios and under adverse environmental conditions without putting human lives in danger. Similarly, broad range of Unmanned Maritime Systems (UMS) available today can operate under different environmental conditions, transport a multitude of payload sensing systems and perform distinctive missions. Concerning maritime robotic tools for search and rescue operations, two works are worth mentioning being the Emergency Integrated Lifesaving Lanyard (EMILY) system and the Autonomous Galileo-supported Rescue Vessel for Persons Overboard (AGAPAS) project. EMILY is a remotely operated autonomous vessel that aims to assist the life guards in crowded beaches, providing them a safe and fast response means. AGAPAS is a project orientated, specifically to person overboard situations, where an automatic system perceives that someone fell from the vessel

and deploys an Unmanned Surface Vehicle (USV) capable of fetching that. While these systems are operated in an independent way, particularly in the maritime scenario, multiple heterogeneous unmanned platforms (by air or surface) will co operate, in order to detect and assist victims.

The assistance of UMS in search and rescue operations may include providing means for the floatation and thermal protection, preventing from fatigue, drowning or hypothermia, thereby increasing the survival rate. Furthermore, when the conditions do not permit the manned search and rescue operations, a fast and effective operation within the disaster scenario by the robotic assets will make it possible for the rescuers to evaluate and remotely assist the victims before resuming action as soon as the safety conditions are ensured. Some of these Robotics assets are enumerated below.

U Ranger USV. The U Ranger is a remotely controlled Unmanned Surface Vehicle (USV) mainly tailored for harbour and ship protection, able to perform intelligence, surveillance and reconnaissance operations and patrolling of pre defined areas. The U Ranger can be equipped with different kinds of sensors like cameras and radar for surface area control, sonar sensors for underwater control and other sensors for environment control. The U Ranger USV was equipped with a sensor and autonomous behavior payload from Centre for Maritime Research and Experimentation (CMRE).

Roaz II USV. Roaz II is an USV that can operate in full autonomous mode or remotely operated from a base station. It can be configured to carry different sets of sensors and to perform several kinds of missions, including environmental monitoring, harbour protection or bathymetric data gathering.

Roaz II is operated from a mission control station composed by a ruggedized computer and a set of auxiliary devices including antennas. It is capable of executing autonomous missions defined by a list of waypoints differential GPS system and an inertial measurement unit. Telemetry as well as payload data is transmitted in real time to the mission control station.

Unmanned Capsule. The Unmanned Capsule (UCAP) is a single hull vessel, with a lower rear deck to accommodate the un inflated life raft as well as the corresponding compressed gas bottle. The hull was fabricated in fiberglass, using as custom made mould. This console allows the operator to switch between different UCAP operating modes like Idle Mode, Anchor Mode, Waypoint Navigation Mode, Remote Control Mode, External Mode etc. When the UCAP is in autonomous operation, further information concerning the status of such operation (distance to next waypoint, estimated time to next waypoint completion or distance to anchor point in anchor mode) is also provided to the operator.

Endowing medium and large scale unmanned surface vehicles and capsules with augmented perception and autonomic capabilities could perform search and rescue operations in complex environments with the presence of other vessels and victims on the water, reporting back to the control stations situational awareness information. These developments and their extensive validation in several field trials and demonstrations carried out along the project are therefore a relevant contribution for the real world deployment of robotics platforms which may be employed in maritime search and rescue operations, complementing the operation of traditional search and rescue teams.

A Glimpse of ICG SAR Efforts during Very Severe Cyclone 'OCKHI'

*Compiled by:
Commandant Arun Singh, Joint Director (SAR)*

The south and west coast of India faced the fury of nature when a deep depression in Bay of Bengal converted into a severe cyclone 'Ockhi' on 30 Nov 17. Consequent to intensification of the deep depression into Cyclone in area off south Tamil Nadu coast, Indian Coast Guard (ICG) launched an unprecedented large scale Search and Rescue operation along the South Tamil Nadu, Kerala and Lakshadweep coast. Ships and aircraft were immediately deployed for an extensive search to locate and render assistance to fishermen in distress at sea. The extended and well planned SAR operation, which commenced on 30 Nov 17, involved largest ever mobilisation of ships and aircraft for search of stranded boats in every part of Indian Exclusive Economic Zone which could have been impacted by the cyclone for rescue of fishermen. The well coordinated SAR operation by Indian Coast Guard, the nodal agency for maritime Search and Rescue in Indian waters, involving various agencies viz. Indian Navy, Indian Air Force, Merchant vessels plying in area resulted in rescue assistance to 850 stranded fishermen collectively at sea. The salient aspects of concerted Search and Rescue efforts of ICG off Tamil Nadu, Kerala and adjoining sea areas in wake of Cyclone Ockhi are elucidated in succeeding paragraphs.

Advisories were issued to State Administration on 29 and 30 Nov 17 to advise fishermen not to venture into sea. Preparedness, Response and Coordination meetings were undertaken by ICG local authorities with State/ Local administrations and Fisheries authorities on 30 Nov 17 for impending contingencies. ICG Ships and aircraft were deployed for search and rescue operation at sea. By the night of 30 Nov 17/ first light of 01 Dec, 10 Indian Coast Guard ships were deployed at sea rendering assistance to stranded fishermen in Cyclone affected areas. Thereafter, on an average, 09-13 ships were maintained at sea along the Cyclone affected areas of Tamil Nadu, Kerala and Lakshadweep coast for sustained search and rescue efforts. By night of 30 Nov itself, MRSC Tuticorin had coordinated with local administration for the safe return of 71 fishermen to Kanyakumari harbour. Coast Guard Dornier aircraft and helicopter were launched with first light on 01 Dec 17 for air-sea coordinated searches. Thereafter, 02-03 Dornier aircraft from Kochi and Mumbai and 01-02 helicopters from Kochi and Goa carried out extensive aerial searches every day, which resulted in location and subsequent rescue of many stranded boats at sea. Helicopters were also embarked onboard larger Coast Guard vessels for extended searches at sea. Extensive close coast searches were undertaken along the Kerala and Lakshadweep coast by shore and ship based helicopters. ICG resources in cyclone affected states were aptly augmented by



deploying ships and aircraft from Goa, Maharashtra and Gujarat states.

International Safety Net (ISN) Messages were activated by Maritime Rescue Coordination Centre (MRCC) advising mariners to keep sharp lookout and render assistance to stranded boats/ fishermen while transiting the cyclone affected areas. These messages were repeatedly transmitted on almost daily basis through ISN and concurrently through NAVTEX messaging systems. MRCC was also coordinating with merchant vessels plying the cyclone affected areas for assisting the stranded fishermen. Effective coordination was maintained with all resource agencies at sea and state/ local administration ashore to ensure prompt assistance to fishermen at sea and relief assistance in cyclone affected areas.

Repeated and extensive close coast and deep sea searches extending upto Indo-Maldives and Indo-Sri Lankan maritime boundary line including all probable sea areas of Indian Exclusive Economic Zone (EEZ) were undertaken by ICG units for the missing fishermen. The local administration and fishermen were also embarked onboard ICG ships for joint searches at sea in the specific areas off Tamil Nadu and Kerala coast. High Commission of India in Sri Lanka and Maldives were also contacted to ascertain details of stranded Indian fishermen, if any. On request of ICG, Maldives authorities also coordinated search in their waters and confirmed that no stranded boats/ fishermen were sighted in their waters.

Due to well designed & coordinated operations, a total of **488 fishermen** were rescued/ assisted by ICG ships and aircraft at sea. Overall, 850 fishermen were collectively assisted/ rescued at sea by ships and aircraft of all resource agencies operating in close coordination with ICG. Assistance to 29 fishermen by merchant vessels and trawlers plying in cyclone



affected areas was also coordinated by MRCCs. **09 out of total 25** bodies recovered at sea, were recovered by the ICG ships and handed over to state authorities. Coordination was also maintained with Port authorities in Karnataka, Goa, Maharashtra and Lakshadweep, where many fishing boats of Kerala and Tamil Nadu had taken shelter.

Indian Coast Guard, being the nodal agency for coordinating maritime Search and Rescue in 4.6 million square kilometres vast India Search and Rescue Region (ISRR), led the SAR operation from front to provide succour to fishermen stranded amid cyclonic catastrophe at sea. Ships and aircraft braving inhospitable weather and monstrous sea conditions toiled to provide succour to each and every one at sea during the testing times. A seamless and collaborative approach was maintained with all stake holders towards the humanitarian operation.

Since its inception in 1978, Indian Coast Guard units in their yeomen service to the nation have saved 8522 precious lives besides undertaking 300 medical evacuations at sea. Indian Coast Guard shall remain committed to provide the required succour to fishermen and mariners during all the contingencies at sea irrespective of time and area, in sync with its motto '*Vayam Rakshamah or We Protect*'.

UPDATED INDIAN COAST GUARD SAR POINT OF CONTACTS (SPOC)

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