



# Safe Waters

NEWSLETTER

On Maritime Safety and Security

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NATIONAL MARITIME  
SEARCH AND RESCUE BOARD



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**CHAIRMAN, NMSARB WITH DR. HARSH VARDHAN, HON'BLE MINISTER FOR  
MINISTRY OF SCIENCE & TECHNOLOGY AND EARTH SCIENCES,  
DURING NMSARB MEETING ON 27 JUL 16 AT NEW DELHI**





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



India, since ratification of the SAR Convention in 1979 and formulation of the National Maritime Search and Rescue Board (NMSARB) in 2002, has come a long way in terms of establishment of National Search and Rescue Apparatus. National Maritime Search & Rescue plan, brought in force in 2002, and as amended in 2013, is proof of the concerted efforts, coordination and synergy achieved in furthering the efficacy of NMSAR Board towards achieving larger goals. Safety of mariners has always been and will always be, a priority for ICG. SAR services will continue to be provided with alacrity to all those in distress.

The prominent issues discussed in XV NMSARB meeting at New Delhi focused towards judicious utilisation of SAR resources for assisting mariners in distress as against the rising number of requests for assistance in situations other than distress and the non-availability of minimum emergency life saving equipment onboard fishing vessels. In addition the harmonisation of aeronautical and maritime SAR was also deliberated.

Indian Coast Guard also conducted the 7th Search & Rescue workshop and SAREX-16 at Mumbai from 02-03 May 16 with a view to bring together all the maritime SAR stakeholders. The successful activation of Incident Command Post and synchronisation of technology with human efforts were the good learning takeaways from the exercise.

I am confident that your combined support will always be forthcoming towards ensuring safety of life and property at sea. I wish that this publication will provide a glimpse into SAR related topics. Happy Reading.

“VAYAM RAKSHAMAH”

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

New Delhi  
07 Oct 16

At the outset, the Secretariat extends its gratitude to the Board Members for extending full support for the successful conduct of the SAREX -16 and the XV NMSAR Board meeting.

Following two issues shall be on the forefront for the SAR Secretariat:-

- Carriage of DATs and other life-saving appliances by fishing boats and MSVs plying our waters.
- Harmonisation of Aeronautical and Maritime SAR.

The inauguration of Search and Rescue Aid Tool (SARAT) will further enable the SAR planners to predict search areas precisely and expeditiously while reducing the response time to a distress situation. As we move forward to the next year we hope to build upon 'SARAT' so as to integrate the requirements of Stakeholders onto a singular platform.

While thanking all the esteemed NMSAR Board members and their representatives, I look forward to any feedback and suggestions from readers to improve upon the contents of this newsletter.

*Ashish Mehrotra*

(Ashish Mehrotra)  
Commandant  
Jt Director (SAR)

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**SAR DATA**

Graph below indicates number of missions undertaken, lives saved and medical evacuations done by ICG.



Graph below indicates lives saved by ICG, Fishermen, Motor Vessel and other resource agencies during period Jan 16 - Aug 16.



Graph below indicates the SAR Missions, Lives Saved and Medical Evacuations since inception to 31 Aug 16.





## Rescue of 08 crew from MSV 'Safeena' off Nancowry (Andaman & Nicobar Island)

At about 0415 hrs on 02 Jan 16, MRCC (A&N) received information from Port Management Board, Port Blair regarding drifting of MSV 'Safeena' with 08 crew onboard. MSV reported loss of rudder and was stranded in position 6 n miles East off Nancowry Island.

On receipt of information, ICGS Durgabai Deshmukh on routine surveillance was diverted for assistance. The ship affected RV with MSV 'Safeena' and took the dhow (alongwith 08 crew) under tow at 0730 hrs on 02 Jan 16 to arrive off Nancowry inner harbour at 1144 hrs on 02 Jan 16. The dhow was then anchored in position 03 n miles Southwest of Morrel Point Light, thus overcoming the distressed situation.

## Assistance to MFB 'Virgin Mary'

At about 1550 hrs on 13 Jan 16, MRCC (MBI) received information from MV 'Sima Giselle' regarding wooden fishing boat 'Virgin Mary' alongwith 11 crew onboard. The boat was reportedly adrift in position 107 n miles Southwest off Mumbai since three days view engine breakdown.

On receipt of information, Coast Guard Dornier aircraft on routine patrol contacted the standard fishing boat and ascertained that the boat had a booster pump failure and required assistance. Aircraft also intimated M/s ONGC Off Shore Support Vessel (OSV) FOG 10, which rendered assistance to stranded fishing boat by supplying food and water to its crew. MRCC (MB) contacted the owner of the fishing boat to arrange towing; however the owner

expressed his inability to tow the boat for 100 n miles. Subsequently, MRCC (MBI) requested M/s ONGC to provide towing assistance to the boat by any OSV scheduled to arrive Mumbai from ODA as a goodwill gesture.

On 18 Jan 16, ICGS Agrim on patrol was diverted for assistance of the fishing boat. Agrim arrived datum at 2345 hrs on 18 Jan 16 and took the boat under tow. The boat along with crew were towed till Middle Ground Mumbai and safely handed over to Commissioner of Fisheries (Mumbai) at 1945 hrs on 19 Jan 16.

## Assistance to FB 'Nixy Mol'

At about 2200 hrs on 06 Feb 16, Maritime Rescue Coordination Centre (MRCC) Mumbai received information from MRCC Chennai regarding fishing boat 'Nixy Mol' experiencing flooding onboard and requiring assistance in position 07 n miles South West of Malvan.

On receipt of information, ICGS C-410 sailed from Goa at 2255 hrs on 06 Feb 16 for rendering assistance to fishing boat 'Nixy Mol'. C-410 reached datum at 0025 hrs on 07 Feb 16 and sighted distressed fishing boat 'Nixy Mol' with 02 out of 03 tanks filled with water. Engine room compartment was flooded upto bilge level. Unable to deflood the tanks by ships submersible pump, due non-conductive sea, C-410 embarked 11 crew ex-fishing boat 'Nixy Mol' onboard and commenced towing her towards Mormugao harbour at 0110 hrs on 07 Feb 16. The boats arrived Mormugao Harbour at 0505 hrs on 07 Feb 16 and was handed over to local agent alongwith crew.

## Assistance to MFV 'Saptagiri'

On 10 Feb 16, ICGS Vishwast whilst on routine patrol sighted MFV 'Saptagiri' adrift alongwith 09 crew in position 86.5 n miles South East of Kakinada Light at 0720 hrs on 10 Feb 16. The boat was adrift due to defective gear box and was unable to communicate with the owner. Vishwast closed in and boarded the boat to ascertain the defect. A technical team tried to rectify the defect, however, the same could not be undertaken as the gear box of the boat had fully ceased and the boat had nil spares onboard.

The master of the boat then requested Vishwast to tow the boat till Kakinada. The disabled boat alongwith 09 crew was taken under tow by Vishwast at 0915 hrs on 10 Feb 16 and proceeded to Kakinada Anchorage. The disabled boat was handed over to ICGS C-141 in position 09 n miles East of Vakalapudi Light at 0730 hrs on 11 Feb 16. Subsequently, C-141 handed over disabled boat to another fishing boat arranged by owner of the boat and safely entered Kakinada fishing harbour.

## Assistance to MV 'BLPL Blessing'

At about 0600 hrs on 08 Mar 16, Maritime Rescue Coordination Centre (MRCC), Port Blair received information from Merchant Vessel (MV) PGS Apollo regarding adrift vessel MV BLPL Blessing in position 25 n miles East of Narcondam Island, Andaman and Nicobar Island requiring towing assistance.

On receipt of the information, MRCC Port Blair established communication with Shipping Company M/s Orient Express Lines Pvt Ltd, Singapore and local Office at Mumbai. Local office of the shipping company intimated that the vessel had total power failure as the shaft generators of the vessel had tripped whilst on load. The emergency DA which



*ICGS Rajshree alongside MV BLPL Blessing for rendering assistance*

comes on load automatically in the event of the main supply tripping also became defective due to malfunctioning of the rectifier assembly. The agent further informed that the efforts to arrange the vessel 30 KW start-up supply to jump start generators and technical assistance through local agent at Port Blair were not successful.

At about 1600 hrs on 08 Mar 16 ICGS Rajshree was diverted to provide assistance and the ship arrived datum at 0515 hrs on 09 Mar 16. Following actions were undertaken by the ship:

- (a) Attempted to recharge disabled vessel air bottles through own compressor but was futile.
- (b) Provided power supply to disabled vessel compressor using own supply cable and charged air bottles.
- (c) Air bottles of MV BLPL Blessing were charged and power supply to fuel and lube oil pumps was provided.
- (d) First DA started and power supply restored at 1100 hrs.
- (e) Started second DA at 1130 hrs.
- (f) PGD systems of the merchant vessel stabilized and normal power supply restored at 1245 hrs.

Rajshree continued to remain in area till main engine of disabled ship was started. Ship's main engine were started at 1330 hrs and subsequently the vessel safely departed area at 1440 hrs on 09 Mar 16 to its next port of call, Chittagong.

### Assistance to FB 'Manasa'

At about 1924 hrs on 15 Mar 16, Maritime Rescue Coordination Centre (MRCC), Chennai received a distress alert from Distress Alert Transmitter (DAT) ID 13294 in position 56 n miles South East of Dolphin Nose Light, Vizag. The distress alert indicated 'Boat Sinking'.

On receipt of information, MRCC Chennai contacted Dy Director Fisheries, Kakinada and ascertained that fishing boat 'Manasa' had ventured into sea from Kakinada with 08 crew onboard on 10 Mar 16. The owner had no contact with the boat thereafter.

ICGS Rajveer on patrol was diverted at 2232 hrs on 15 Mar 16 and directed to proceed with dispatch for rendering assistance. ICG Ship arrived datum at 0015 hrs on 16 Mar 16 and boarded the adrift fishing boat 'Manasa'. It was ascertained that the boat had a gear box breakdown at 0900 hrs on 15 Mar 16, resulting in propulsion failure. There was no other emergency onboard. Subsequently, the boat was taken under tow by Rajveer at 0225 hrs on 16 Mar 16. The ship alongwith the disabled boat under tow entered Vizag harbour safely at 1200 hrs on 16 Mar 16.

### Rescue of 05 crew of FB 'Madhav Krushna'

At about 1900 hrs on 19 Mar 16, ICGS Arinjay intercepted a distress call on VHF from fishing boat 'Madhav Krushna'. The boat was 62 n miles West from Okha reported flooding in engine room and requested immediate assistance.



*Rescued crew of Madhav Krushna*

On receipt of the information, Arinjay in area proceeded with maximum speed to render assistance to fishing boat. Arinjay arrived datum at 2045 hrs and observed heavy flooding in fishing boat. All 05 crew were rescued and taken onboard. The fishing boat was taken alongside and all efforts were made for de-flooding, however, continuous flooding since afternoon and excessive ingress of water resulted in sinking of the boat in position at 2205 hrs on 19 Mar 16. All survivors were subsequently transferred to ICG Ship Meera Behn for onward passage to Okha. At 1300 hrs on 20 Mar 16 rescued fisherman were handed over to Assistant Director Fisheries, Okha.

### Assistance to Sinking MSV 'Selvamatha'

At about 0210 hrs on 19 Mar 16, Coast Guard Headquarters received a telephonic call from MV 'Hafnia Asia' regarding Motorized Sailing Vessel (MSV) 'Selvamatha'. The master intimated that the MSV in distress was reportedly sinking in position 70 n miles West of Beypore Light.

The information was relayed to MRCC Mumbai which immediately contacted MV 'Hafnia Asia' and diverted it to provide assistance to distressed MSV 'Selvamatha'. ICGS Abhinav was also diverted towards the datum for rescue operation. In addition





*Rescued Crew of MSV Selvamatha being attended to by crew of MV Hafnia Asia*



*Rescued crew of FB Mahez*

International Safety Net (ISN) was activated by MRCC Mumbai to keep the merchant traffic clear of the area.

At 0315 hrs on 19 Mar 16 MV Hafnia Asia arrived datum and sighted all 08 survivors of MSV Selvamatha in water. The merchant vessel recovered all the survivors. Abhinav effected RV with MV Hafnia Asia at 0630 hrs on 19 Mar 16 and took over all 08 rescued crew. Thereafter, MV Hafnia Asia resumed passage to Fujairah at 0730 hrs on 19 Mar 16.

Abhinav departed area post undertaking search for the boat and entered Kochi at 2100 hrs on 19 Mar 16 to hand over all 08 crew to Marine Police, Fort Kochi at 2200 hrs on 19 Mar 16.

#### **Rescue of 07 crew of FB 'Mahez' off Ratnagiri**

At about 1130 hrs on 21 Mar 16, Coast Guard Dornier Aircraft CG-764 on task intercepted a Very High Frequency (VHF) CH-16 distress call in position 26 n miles Northwest of Ratnagiri Light. CG-764 passed the information through INMARSAT to Ops Centre, ICG Station Ratnagiri that one fibre boat was being towed by two boats Sri Gajana and Chakravarthy-6. The information was relayed to

Maritime Rescue Coordination Centre Mumbai.

On receipt of the information, following initiated:-

(a) ICGS C-402 sailed from Ratnagiri at 1300 hrs on 21 Mar 16 for rendering necessary assistance.

(b) International Safety Net (ISN) was activated by MRCC Mumbai for alerting mariners in area.

(c) C-402 reached datum at 1500 hrs on 21 Mar 16 and ascertained that fishing boat 'Mahez' with 1500 kgs fish catch was in distress view flooding onboard. The distress message was relayed by fishing boat 'Durga Ambika'.

(d) C-402 lowered the Gemini to access the situation and observed excessive flooding in the engine room.

(e) Boarding party ex-ICGS C-402 embarked onboard distressed fishing boat 'Mahez' and de-flooding was carried out using submersible pump through ship's power supply.

(f) All of the 07 crew of the distressed boat were taken onboard C-402.





*C-402 towing FB Mahez*

(g) Post de-flooding C-402 towed the distressed boat fishing boat 'Mahez' towards Ratnagiri view non operational engine and Diesel Alternator (DA) of MFB and continuous flooding onboard the fishing boat.

(h) C-402 along with rescued crew and distressed fishing boat safely reached Bhagvati Port, Ratnagiri and handed over them to Marine Police, Ratnagiri at 1815 hrs on 21 Mar 16.

### **Assistance to FB 'Rekha Sagar'**

At about 1115 hrs on 06 Apr 16 ICGS Rajratan while operating at notional IMBL, received a VHF call on channel 16 from fishing boat Rekha Sagar, Reg No.-GJ 25 MM 1304, registered at Porbandar with 05 crew onboard and reported excessive flooding in engine room and defective clutching mechanism. On receipt of information, following actions were initiated:-

- (a) Ship proceeded with max speed to provide assistance.
- (b) Fishing Boats operating in vicinity were informed to provide assistance to fishing boat Rekha Sagar.



*ICG repairing hull of FB Rekha Sagar*

(c) Continuous monitoring of the situation on R/T and motivating him to carry out deflooding with all out efforts.

Ship arrived datum at 1243 hrs and lowered Gemini with ship's damage control party alongwith DC equipment. At 1310 hrs Gemini reached alongside fishing boat Rekha Sagar.

Ship's damage control party boarded the distressed boat and observed 6 inch crack in the forward section of hull which was repaired by ship's damage control party by using oakum and QDC. The de-flooding pump of the boat was repaired and it started to pump out the water accumulated in engine room and bilges.

After damage control, Rajratan directed fishing boat Marine Parashmani, Reg No. IND-GJ-25- MM-0963, which was operating in vicinity to take fishing boat Rekha Sagar under tow and proceed to Porbandar. Fishing boat Rekha Sagar entered Porbandar at 1400 hrs on 07 Apr 16 under tow of fishing boat Marine Parashmani safely.

The alertness and timely rendering of assistance saved 05 precious lives and the boat.

## Assistance to FB 'MV Powmay'

At about 1200 hrs on 20 Apr 16, Maritime Rescue Coordination Centre (MRCC) Port Blair received message from Port Management Board, Port Blair regarding fishing boat 'MV Powmay' alongwith 07 crew adrift in position 03 n miles Southwest of Barren Island due to engine failure. The fishing boat had departed Mayabunder for fishing on 17 Apr 16.



*C-416 assisting the distressed vessel*

On receipt of the information, ICGS C-416 was sailed at 1230 hrs from Mayabunder to render assistance. C-416 located the fishing boat anchored in position 02 n miles South of Barren Island. The ship's technical team embarked the fishing boat and tried to rectify the defect which did not fructify. Thereafter, C-416 commenced towing the fishing boat towards Mayabunder. C-416 towed fishing boat MV Powmay alongwith 07 crew entered Mayabunder AM 21 Apr 16 and the boat was handed over to Fisheries Department, Mayabunder.

## Assistance to tug 'Orion Dhanashree'

At about 0400 hrs on 18 May 16, Maritime Rescue Coordination Centre (MRCC), Chennai received distress call of tug Orion Dhanashree through Vessel Traffic Management System (VTMS)



*Disabled Tug Orion Dhanashree*

Chennai intimating flooding onboard. The tug was towing light jack barge and was drifting in position 24 n miles southeast of Chennai harbour due to flooding in Aft Steering Position (ASP) causing complete loss of steerage way. Despite best efforts of the crew, ingress of water could not be arrested and requested immediate towing assistance.

The tug had departed Vizag on 14 May 16 with 11 crew onboard and was scheduled to reach Mumbai on 02 Jun 16.

On receipt of the information, ISN was activated by MRCC (Chennai). MV Mearsk Brooklyn responded and was directed to remain in area till



*Disabled tug under tow of ICGS Varad*



arrival of Coast Guard ship. ICGS Varad was sailed from Chennai at 0700 hrs on 18 May 16 for rendering assistance. ICG Ship arrived datum at 1020 hrs on 18 May 16 and reported that tug's Aft Steering Position (ASP) was completely flooded. Post assessing the situation, Varad took the disabled tug alongwith barge under tow at 1201 hrs on 18 May 16 and arrived off Chennai fairway buoy at 2110 hrs on 18 May 16. Thereafter disabled tug was safely handed over to local agent.

### Assistance to MSV 'Safina Al Ghelani'

At about 1150 hrs on 12 Jun 16, MRCC Port Blair received a DAT distress alert through MRCC Chennai from MSV 'Safina Al Ghelani' in position 10 Deg 59 Min N 092 Deg 41 Min E (185-North Point Lt-41 NM). The vessel was carrying general cargo and household items from Port Blair to Hut Bay. The vessel had departed Port Blair at 0500 hrs on 11 Jun 16. The vessel activated DAT at 1030 hrs on 12 Jun 16 intimating about flooding in its engine room.

The distress alert was received at MRCC Chennai and subsequently, MRCC Chennai relayed the information to MRCC Port Blair. On receipt of

the distress alert and its verification, ICGS C-428 was sailed with Despatch from Port Blair. DSS Ship MV Sentinel on transit to Port Blair from Hutbay was diverted to provide necessary assistance till arrival of CG SRU's. CG - Chetak 802 was tasked for search and rescue operation. ICGS Rajshree was also sailed for augmenting SAR efforts.

CG-802 sighted the distressed vessel near North Brother Island and rescued all the 07 crew from the vessel braving the adverse weather conditions. 03 of the rescued crew members were embarked onboard C-428 and rest 04 were brought directly to Port Blair. The vessel subsequently sunk off North Brother Island.



*Debris of MSV Safina Al Ghelani*

All rescued fishermen were handed to owner of the distressed vessel at Port Blair.



*Rescued crew of MSV Safina Al Ghelani*

# MEDICAL EVACUATION

## FB 'Rajmata' off Dwarka

At about 1145 hrs on 10 Mar 16, Remote Operating Station (ROS) Porbander intercepted a VHF call from fishing boat 'Rajmata' in position 48 n miles Southwest from Dwarka light. It was reported that one crew had sustained severe burn injury resulting from domestic stove blast onboard.

On receipt of the information, Coast Guard District Headquarters No-1 diverted ICGS C-143 towards the datum with maximum speed for MEDEVAC. At 1230 hrs C-143 reached datum and located the fishing boat. Injured fisherman along with two other fishermen from fishing boat 'Rajmata' were embarked onboard C-143. Initial investigation revealed that the patient sustained 60-70 percentage of burns, but was conscious and in walking condition.

C-143 along with the patient entered Kankai jetty (Okha) and handed over the patient to station medical team for further medical treatment. The patient was admitted to Tata Chemical Hospital, Mithapur and later shifted to Irwin Hospital, Jamnagar.

## MFB 'Star Fish' off Karwar

At about 1745 hrs on 05 Apr 16, ICGS C-420 on routine patrol received a VHF call on MMB Channel-16 from MFB 'Star Fish' regarding Medical Evacuation of one fisherman (Mr. Damodar, Age 55 yrs) suffering from intense stomach pain in position 11.5 n miles Northwest of Karwar Light.

On receipt of the information, C-420 relayed the information to ICG Station Karwar. ICG Station Karwar directed C-420 to render necessary

assistance. C-420 arrived datum 1805 hrs on 05 Apr 16 and evacuated the patient alongwith one attendant. C-420 alongwith patient entered Karwar port at 1840 hrs and the patient was admitted to ICU at Govt. Hospital, Karwar at 1910 hrs on 05 Apr 16 for further medical management.

## MV 'Goa', off Mumbai

At about 1927 hrs on 06 Apr 16, Maritime Rescue Coordination Centre (MRCC) Mumbai received telephonic call from Master of MV Goa regarding injury to fourth engineer who had sustained deep wound on his ear and hand and was bleeding profusely. The vessel was anchorage in position 22 n miles Northwest of Prongs Light. The master also intimated that the head of the engineer was stuck in lift for three hours. Master of the vessel requested for medical evacuation.

On receipt of the information, ICGS Agrim which was on routine area patrol, was diverted towards MV Goa at 2015 hrs on 06 Apr 16. Agrim evacuated the patient and handed over to civil boat 'Arbas' hired by Shipping Corporation of India (SCI) off Middle Ground, Mumbai at 0240 hrs on 07 Apr 16. The hired boat alongwith causality arrived Mumbai harbour safely and the patient was admitted in Shah Clinic, Marine Lines, Mumbai at 0330 hrs on 07 Apr 16.

## Medevac from Narcondam Island

At about 2000 hrs on 24 Apr 16, Maritime Rescue Coordination Centre (MRCC), Port Blair received information from Office of the Dy Superintendent of Police (Dy SP), PMF, Andaman and Nicobar Island regarding one Head Constable (H/C Rajesh Ram, Age 39 yrs) suffering from high fever and needs to be evacuated urgently from Look Out Post (LOP), Narcondam for immediate medical treatment.



On receipt of the information, ICGS Rajkamal immediately sailed from Diglipur for evacuation of the patient. The ship arrived off Narcondum and evacuated the patient at 0350 hrs on 25 Apr 16. The patient was administered first aid onboard during the passage to Diglipur. Rajkamal alongwith the patient arrived Diglipur at 0930 hrs on 25 Apr 16 and patient was handed over to local Police for further treatment.

#### Medevac from FB 'Savadhan' off Tarapur

At about 1455 hrs on 27 Apr 16, Remote Operating Station (ROS) Mumbai received telephonic information from Shri SG Dhaftardar, Dept. of Fisheries, Utan regarding one fisherman onboard fishing boat 'Savadhan' who was unconscious in position 45 n miles Southwest of Tarapur light. Coast Guard Dornier on patrol also intercepted distress call of fishing boat Savadhan on MMB CH 16. On establishing two way communication with fishing boat it was intimated that one crew was unconscious due injury on chest and required immediate medical assistance. CG Dornier immediately relayed the message to Coast Guard Communication Centre, Mumbai and ICGS SK Chauhan. CG Dornier also advised fishing boat to alter course towards ICG Ship.

On receipt of information, SK Chauhan which was on area patrol was diverted towards fishing boat 'Savadhan' for Medical Evacuation of the patient at 1540 hrs on 27 Apr 16. SK Chauhan arrived datum at 1830 hrs and boarding party of SK Chauhan boarded fishing boat 'Savadhan' and ascertained that patient was unconscious and his pulse was low. At about 2000 hrs on 27 Apr 16, District Medical Officer (DMO), District Headquarters (DHQ) No.-02, Mumbai on VHF, provided medical advice and first

aid including 02 IVs was provided to the patient. The patient's pulse improved but he required hospitalisation.

At about 2230 hrs on 27 Apr 16, fishing boat 'Savadhan' alongwith patient entered Bhayandar fishing harbour and patient was immediately transferred to Nanavati Hospital, Mumbai by Fisheries Association for further medical management.

#### Medevac from MT 'Torm Venture'

At about 1117 hrs on 08 May 16, Maritime Rescue Coordination Centre (MRCC) Mumbai received an e-mail and telephonic call from Radio Medical Denmark regarding medical emergency onboard MT 'Torm Venture' in position 205 n miles east from Kochi view Chief Engineer of the vessel Mr. Edmund Dam Madsen (63 Yrs), Nationality-Denmark, was suffering from stomach pain due to ulcer. Radio Medical Denmark requested evacuation of patient to Hospital.

On receipt of the information, MRCC (Mumbai) contacted the vessel and ascertained status of patient and intentions of master. Initially, MRCC (Mumbai) requested vessel to proceed Kochi for



*Casualty being lowered from MT Torm Venture*

disembarkation of patient where local agent was making arrangement. However, as patient's condition severely deteriorated master described it as a life threatening condition. Hence, vessel was diverted to Agatti Islands. Subsequently, ICGS C-421 sailed from Kavarathy and evacuated the patient along with one escort (Indian crew from said vessel). At 1715 hrs on 08 May 16 the patient and escort were disembarked into a hired boat. Thereafter, patient along with escort was shifted to Rajiv Gandhi Specialty Hospital, Agatti.



*ICG team receiving the casualty*

MRCC (Mumbai) requested Administration of Lakshadweep Islands to shift patient by air ambulance at the earliest. The patient under escort of Doctor from Rajiv Gandhi Specialty Hospital, Agatti was evacuated to Kochi by Pawan Hans helicopter at 1525 hrs on 09 May 16.

#### Medevac from MV 'King Fortune'

At about 1030 hrs on 24 May 16, Maritime Rescue Coordination Centre (MRCC) Mumbai received telephonic call/E-mail from local agent Admiral Shipping Pvt Ltd regarding medical casualty onboard MV 'Fortune'. One crew of the vessel Mr. Liu Zu Yuan (27 yrs), Nationality-Chinese, had sustained head injury on 20 May 16 due to fall on deck and condition of the crew was very serious. The vessel was operating 18 n miles Southwest of Karwar.

On receipt of the information, MRCC (Mumbai) established contact with the vessel and advised master to proceed towards New Mangalore for evacuation. ICG Station Karwar tasked ICGS C-420 operating in area to render assistance. C-420 arrived datum at 1215 hrs on 24 May 16. The ship's boarding party went alongside MV King Fortune by ship's Gemini and safely transferred

the patient onboard alongwith one escort at 1300 hrs. The patient was unconscious. However, his pulse was present at the time of taking him onboard.

C-420 arrived Karwar port alongwith patient at 1345 hrs on 24 May 16 and the patient was shifted to ambulance at jetty. The patient was handed over to Mr Gitesh (agent) of M/s Admiral Shipping Ltd at 1350 on 24 May 16 for further medical management at Karwar civil hospital.



# SAR EVENTS

## M-SAR Training for MRCC/RCC Operators

The National Maritime Search and Rescue Board (NMSARB) conducted fourth refresher course on Search and Rescue for MRCC/RCC operators at Civil Aviation Training Centre (CATC), Allahabad from 01-03 Feb 16. 15 participants from Indian Coast Guard and Airport Authority of India attended the course.

The classes were conducted on various subjects related to Maritime and Aeronautical Search and Rescue operations. During the course, the participants also shared their experience, which resulted in enhancing inter-agency coordination between operators of RCCs and MRCCs.

## SARCOMEX-16 with MRCC Kobe (Japan)

To Exchange and upgrade SAR coordination skills between neighbouring SAR agencies, the sixth Search and Rescue Communication Exercise between MRCC Port Blair and MRCC Kobe (Japan) was held from 1030 hrs to 1130 hrs on 21 Jun 16.



*COMDEX in progress at MRCC (Port Blair)*

The SARCOMEX for the flow of information between MRCC Port Blair and MRCC Kobe began

with MRCC Kobe giving a test call at 1020 hrs on 21 Jun 16. Thereafter, SAR communication situations were exercised. The exercise was terminated at 1140 hrs on the same day by MRCC Port Blair intimating 'End of Exercise' to MRCC Kobe.

## National Maritime Search and Rescue Exercise (NMSAREX): 02-03 MAY 16



*Rescue of survivors from the ill-fated aircraft, using boats*

Every year thousands of passengers travel across the oceans by passenger airlines and cruise ships. The efficiency brought about by cheap flights and the airlines opting for bigger aircrafts, there will be a sharp rise in the number of passengers travelling and thus the air traffic and shipping traffic over seas will increase tremendously. Although, the aircrafts and ships are constructed with full safety in mind, accidents over sea do occur regularly. In some cases, the aircraft may have no option to land at the nearest aerodrome but could undertake emergency landing over water to save the lives of the passengers. The classic example of such safe water landing is the United Flight 1549 which undertook unpowered emergency landing on Hudson River after takeoff thereby saving 155 passengers and crew lives.

Not all flights which landed at sea were lucky enough to save the passenger lives. The scheduled



*Winching the survivors to safety*

passenger flight Air France 447 from Rio-de-Janeiro, Brazil to Paris crashed into Atlantic Ocean on 01 June 2009, resulted in 228 fatalities (216 passengers and 12 crew) and no survivors. Five years later, Malaysia Airlines Flight 370 took off from Kuala Lumpur, Malaysia for Beijing disappeared over South China Sea on 08 Mar 2014, resulting in 239 presumed fatalities (227 passengers and 12 crew) and no survivors. There were two main similarities in both these crashes; firstly both were aeronautical maritime incidents and secondly there were no survivors.

national Civil Aviation regulations does not require commercial pilots to train to ditch, but airline companies do undertake training for their cabin personnel on the evacuation process post ditching at sea. Countries implemented rules laying circumstances (kind of operator, number of passengers, weight, route) an aircraft has to carry emergency equipment including floating devices such as life jackets and life rafts.



*Recovery of survivors from life rafts*

The major aircraft accident over sea necessitated the world's apex aircraft operation regulatory authority, International Civil Aviation Organisation (ICAO) to revisit international standards and recommend enforcement of Global Aeronautical Distress and Safety System (GADSS) on similar lines as Global Maritime Distress Safety System (GMDSS) for ships. Taking into consideration the probability of aircraft accidents at sea and the necessity to undertake mass rescue of passengers, the Indian Coast Guard, the apex body for coordinating Maritime Search and Rescue at sea for India conducted NMSAREX – 16 off Mumbai on 03 May 2016, simulating a maritime aeronautical distress situation, with the participation of National Maritime SAR Board members, International Observers, Aviation Authorities and other stakeholders.



*Expeditious transfer of injured personnel to shore using Hover Craft*

Ditching or controlled landing of commercial aircraft at sea are a rare occurrence. The Inter-



The primary aim of Maritime Aviation SAR exercise was to demonstrate a real time scenario of distress alerting, rescue of passengers at sea and highlight the functioning of M-SAR organisation for Mass Rescue Operation (MRO). An innovative improvised technique was used to develop scene of ditched aircraft showing broken fuselage of aircraft, 06 Liferrafts and about 150 mannequins were deployed simulating as survivors in water. Maritime distress scene was indicated by using pyro-techniques such as orange smoke marker, man overboard marker, hand flare and rocket parachutes to provide realistic impact.



*Airforce helicopter recovering the survivors*

Japan, Australia, Bangladesh, Malaysia, Seychelles, Myanmar, NMSAR Board members and representatives of other SAR agencies witnessed the Maritime Aviation SAR exercise off Mumbai. The exercise was conducted by the Commander Coast Guard Western Region IG K Natarajan, PTM, TM and reviewed by the Director General Rajendra Singh, PTM, TM, Chairman of the National Maritime SAR Board. Various drills for rescue of survivors at sea were demonstrated in addition to MRO. Aerial SAR demo included dropping of Self Inflatable Life Raft by Coast Guard Dornier aircraft drill for rescue of survivors by winching was also conducted by CG Chetak, CG ALH, IN Seaking and IAF MI-17 Helicopters. Surface SAR demo showcased Life



*An aerial view of the incident location*

There were total of 13 Ships, 01 Hovercraft and 06 aircraft participating as Search and Rescue Units (SRU). The agencies which actively participated in the exercise included Indian Navy, Indian Air Force, Airport Authority of India, INMCC, Mumbai International Airport Ltd (MIAL), Air India, Airline Operator Committee (AOC), Municipal Corporation of Greater Mumbai (MCGM), Mumbai Fire Brigade Dept., Govt Hospitals, Mumbai Local Police, Immigration Dept., Coastal Security Police, Mumbai Port Trust and Jawahar Lal Nehru Port Trust.

Foreign nationals from UAE, Maldives, Srilanka,



*Boat crew recovering the survivors*

Raft embarkation drill, rescue drill by Jason's Cradle, rescue Operation by Scramble cum Rescue Net, recovery of critical causality by Neil Robertson Stretcher and rescue Operation by Air Cushion Vessel and transfer of casualties to hospital ship and shore hospitals by helicopters, Interceptor Boats and Air Cushion Vessel.

The Mass Rescue Operation involves the need for immediate assistance to large number of people in distress by pooling of resources from various stakeholders. Since the MROs are relatively rare, it is difficult to gain practical experience, however, during Maritime Aviation SAR exercise the MRO was executed with well planned and closely coordinated large scale actions using resources from multiple organizations for intense life saving efforts. The major feature of M-SAR exercise was the activation of Incident Command System (ICS), which was designed to effectively coordinate rescue operation when multiple organizations are jointly involved for emergency response activity. The ICS remain focused on promoting effective overall response without taking over responsibility or authority from SAR services. The ICS proved very useful for effective coordination for safe transfer of casualties, care for passengers, liaison with medical triage camp, medical management at Govt. Hospitals and maintaining international and public relations such as notification to next of kin, media briefing, etc.

The Medical Triage Camp/Reception Centres were established at four locations viz., Giragoan Chowpatty, Mahalakshmi Race Course, Mumbai Port Trust and Sassoon Dock with assistance from Disaster Management Group, Municipal Corporation of Greater Mumbai. The response of Disaster Management Unit and MCGM during Maritime Aviation SAR exercise was overwhelming. MCGM



*Shore reception facility for the critically injured*

actively participated and undertook large scale mobilisation of personnel, doctors, paramedic staff, ambulances, fire brigades, traffic police and Govt. hospital staff. A total of 301 personnel from various agencies of Disaster Management Group which included 37 Doctors, 23 nursing staff, 09 pharmacist, 16 dressers, 15 paramedic staff, 36 supporting staff and 20 ambulances were positioned at Medical Triage Camps for initial medical management. The medical casualties transferred from sea to shore were given first aid at medical camps and critical ones were shifted to six Govt. hospitals (Nair, Saifee, Jaslok, GT, ST Geroge and KEM hospital) post evaluating the medical condition of patients.



*Using Jason's cradle to recover the casualties*



# ARTICLES ON MARITIME SAFETY

## SAR OPERATIONS, INCLUDING MARITIME SAFETY AND SECURITY

*Compiled by: Asst Comdt H Shekhran, ICGS Rajkiran*

### Introduction.

The nations around the ocean have benefited themselves from its rich trade, while the interaction resulting from these maritime exploits, whether of a cultural and religious nature, or of conquest and slavery, has invariably influenced the lives.

Maritime security is now no longer the domain of colonial states or superpowers, but has become multifaceted and dynamic. New role players such as India and China have become major powers, and new national alliances are changing the scene. But current global realities have introduced maritime security problems as non-state actors are influencing security in the area directly. This is a serious development since the rich maritime trade, which includes much of the world's energy trade, is crucial to the global economy. It seems that many of the lessons of centuries gone by are again being learned-rather than doing battle, Nations are strengthening their Coast Guards to project power and play a diplomatic role to maintain good order at sea.

The world's coast guards normally deal with marine safety, maritime security, life-saving, law enforcement, marine environmental security and fisheries. These call for monitoring, control, surveillance and response (MCSR) at sea. Coast guards all over the world are country-specific, and to that extent asymmetrical in their duties and functions, though they have some common traits.



*Disembarkation of injured survivors at shore*

The exercise was preceded by a SAR workshop on 02 May wherein all the operational and administrative issues involved in such emergency were discussed threadbare. The participation of all agencies was overwhelming and the opportunity was availed by all concerned including few airline operating agencies to revalidate contingency plan. It was also a learning experience for foreign observers and Maritime Aviation SAR board members. All participating agencies were benefitted from the well coordinated Maritime Aviation SAR exercise which would ensure coordinated response in case of real time maritime accidents.

*Commandant Anupam Rai  
CGRHQ (West)*

## Maritime Search and Rescue.

Maritime search and rescue entails searching for persons, ships or other craft that are feared to be in distress or imminent danger, and rescuing or helping them. It is one of the operational tasks to prevent death, injuries, fatalities and property loss associated with maritime activities at sea, and reach out to those in distress and traumatic situations at all times in all weather conditions and ensure safety and security from natural or human induced disaster.

The Coast Guard is the Coordinating Authority in a mission of search and rescue which is terrain-



*ICG helo in action*

specific, not victim specific. The mission is carried out with the help of three Maritime Rescue Coordination Centres (MRCC) based at Mumbai, Chennai and Port Blair. There are also Rescue Sub-Centres functioning from Coast Guard District Headquarters at Porbandar, Goa, New Mangalore, Kochi, Vishakhapatnam, Paradip, Haldia, Diglipur and Campbell Bay. These centres function round the clock. Communication for search and rescue is provided through fixed communication networks such as GMDSS (Global Maritime Distress Safety System), ATS (Air Traffic Services) channels,

DSC (digital selective calling) and through INMARSAT (the international maritime satellite earth station).

The Coast Guard has been operating the ship reporting system INDSAR (Indian M-SAR computerised ship reporting system) since 01 February 2003. It is a voluntary toll-free reporting system that will assist the MRCCs to divert the most suitable ship to the scene of distress, and also keep track of a ship that is overdue or may need urgent assistance. Participation in INDSAR is voluntary and free of cost.

## Issues in Maritime Safety and Security.

Maritime safety reflects directly to the national security efforts of a specific country to prevent the illicit activities in its maritime domain. India's key maritime geography and central location provides it with a better reach across the waters. No need to emphasise that it also expands India's maritime responsibility across a large range. The vital determinants including energy security, seaborne trade, shipping and fishing, deep sea mining, scientific research are all dependent on the peace and security in the waters around. It requires a strategy accorded with increased focus on the following:-

- (a) The safety and security of seaborne trade and energy routes, especially in the IOR, considering their effect on global economies and India's national interests.
- (b) The importance of maintaining freedom of navigation and strengthening the international legal regime at sea, particularly the United Nations Convention on the law of the sea (UNCLOS), for all-round benefit.



(c) The considerable scope and value in undertaking cooperation and coordination between various agencies, to counter common threats at sea.

## **Conclusion.**

Search and rescue and maritime security strategy in the Indian Search and Rescue Region is comprehensively covered by the Indian Coast Guard round the clock. Untiring efforts under difficult conditions have resulted in saving of numerous lives in the recent past and the strategy shall continue to be reviewed and refined, in relation to developments in the maritime environment, so as to remain contemporary and relevant.

## **MARITIME SEARCH AND RESCUE OF REFUGEES EVOLUTION AND CHALLENGES**

*Compiled by: Dy Comdt PK Shah, H-182*

## **Introduction.**

This decade has seen an upsurge in the number of people taking to the sea in search of safety, economic opportunities, or both. However, danger often awaits those who choose the sea route in their escape from troubled countries. Desperate people crowd into decrepit ships, and often are placed in perilous situations by unscrupulous people-smugglers. The headlines are full of tragedies, and many more go undetected. The scale of the problem is hard to measure, as many ships and bodies disappear into the sea.

States have reacted sluggishly at best, and cynically at worst, to the increasing numbers of would-be migrants and refugees who encounter serious danger at sea. To further complicate matters, there is no clear answer in international law to the

thorny question of who has responsibility for taking in asylum seekers rescued at sea, adjudicating their claims, and providing a place of safety for those who are confirmed in their need for international protection. What follows here is a description, in broad strokes, of the dilemma facing refugees and asylum seekers who encounter danger at sea, coastal states, crews and captains, and refugee protection agencies.

## **Evolution.**

Since the time the modern refugee regime was codified in the early 1950s until the late 1970s, rescue at sea was not a major issue in refugee protection. The numbers of asylum seekers picked up were relatively small, and it was usually possible for them to have their claims processed in the next convenient port of call of the rescuing ship. They could then generally find protection there, in the country where the ship was registered, or in another country where the refugee had previous ties. The Vietnam War changed all that.

The problems associated with the rescue of refugees and asylum seekers at sea reached a crisis point in the late 1970s, when tens of thousands of Vietnamese refugees took to the South China Sea in boats that were in many cases unseaworthy and in all cases risked becoming the prey of brutal pirates who attacked, looted, and disabled boats, often killing or abducting passengers. Many merchant vessels plying those waters encountered foundering boats and followed the normal practice of rescuing the passengers and trying to disembark them in the next port of call. Nearby Coastal States such as Malaysia and Thailand, however, feeling overwhelmed as the number of sea-borne refugees continued to climb, the States refused to allow disembarkation.

In 1978, the United Nations High Commissioner for Refugees (UNHCR) brokered an agreement under which the Coastal States would allow these “boat people” to come ashore if other (mainly western) States agreed to resettle all such people within 90 days of their disembarkation. However, the arrangement did not work as smoothly as hoped. Ships found themselves subject to lengthy and costly delays as Coastal States demanded that specific resettlement provisions be put in place prior to disembarkation. Ship owners who respected the traditions and laws governing rescue at sea bore all the direct costs of making a rescue. Refugee boats arrived with dead and dying passengers throughout the early 1980s, and survivors reported that 80-90 percent of the ships they had hailed refused to respond to distress calls. Omniously, the ratio of rescues to arrivals continued to shrink.

In 1984-1985, UNHCR put in place a number of emergency measures: they appealed successfully for more resettlement places to be offered and streamlined the procedures for matching up arrival and resettlement places. They established a scheme to reimburse owners for the direct costs of rescue, issued guidelines for ship owners and masters on the operational aspects of rescue, and sent out maritime radio messages explaining rescue procedures and appealing for ships to respond to boats in distress. They also began issuing public commendations to vessels that rescued refugees. By 1985, rescue was again on the rise. The crisis was slowly defused as the new measures took hold and the number of boat departures from Vietnam gradually declined.

The 1990s again saw an upsurge in the number of people taking to the sea in attempts to reach places of safety and/or opportunity. Tighter controls at borders and ports-of-entry had the unintended

consequence of increasing the role of professional smugglers; the high profits in the trade attracted organized crime to people-smuggling and thereby increased the dangers.

The addition of a criminal element hardened both official and public attitudes toward boat arrivals. Authorities in the intended countries of destination tended to lump all the arrivals into the category of economic migrants, complicit with criminals, despite the fact that many of the arrivals declared their intention to claim asylum and came from some of the most repressive and/or lawless countries in the world.

### Safe harbours.

While the obligation of seafarers to rescue people in peril is clear in legal documents, what happens next is murkier. The convention on search and rescue mandates that a rescue is not complete until the rescued person is delivered to a place of safety. That could be the nearest suitable port, the next regular port of call, the ship's home port, a port in the rescued person's own country, or one of many other possibilities.

When refugees or asylum seekers are among those rescued at sea, however, the list of options is narrowed. A refugee must not, under international law, be forcibly returned to a country where his or her life or freedom would be endangered or, by extension, to a country where he or she would not be protected against such return.

### Challenges.

One can correlate with the recent Syrian crisis where most of the European countries have denied entry of Syrian refugees into their country. Thus the intersection of maritime law and refugee law thus leaves ship owners, masters, and crews in a

quandary. They must pick up refugees and asylum seekers whose lives are in danger, but no State is required to take them in.

The ship itself cannot be considered a “place of safety” - indeed, carrying a large number of unscheduled passengers may endanger the crew and passengers themselves, owing to overcrowding, inadequate provisioning, and the tensions of life in close quarters. The inability to disembark rescued passengers in a timely fashion and return to scheduled ports of call creates a profound disincentive for the maritime industry to engage actively in search and rescue missions.

As the number of incidents of this type has increased, states have become more and more determined to deter and divert ships that might bear asylum seekers toward their shores. States have reacted slowly, and at times without good will, to the increasing numbers of would-be migrants and refugees who have met disaster at sea.

In perhaps the most notorious interception incident, the Norwegian container ship Tampa, en route to Australia, picked up 438 people, mostly from Afghanistan, from a sinking boat in the Indian Ocean in August 2001. Australia refused to allow the ship to dock in an Australian port or to unload its passengers. Eventually, it forcibly transferred the rescued passengers first to warships and then to island possessions or neighbouring states such as Nauru and Papua New Guinea for processing of their asylum claims.

In this long process of frustrated attempts to disembark the rescued passengers, the owners and agents of the Tampa incurred substantial losses in an industry where profit margins are razor-thin. The UN High Commissioner for Refugees gave the

captain, crew, and owner of the Tampa its highest award for work on behalf of refugees for their principled actions in the face of such disincentives.

## Conclusion.

The only question in maritime search & rescue of refugees remains is who has responsibility for accepting asylum seekers rescued at sea, adjudicating their claims, and providing a place of safety for those who are confirmed in their need for international protection does not have a clear answer in existing law. States that refuse to relieve rescuing vessels of their unanticipated passengers not only place an unfair burden on the seafarers (who, after all, have taken the rescued people into their living quarters their homes, in effect), but also threaten the conventions that have long upheld the system of rescue at sea.

These dilemmas call for cooperation among all the parties - states, the shipping industry, and international organizations such as UNHCR and the International Maritime Organization to uphold the humanitarian practices that are an honorable part of maritime tradition. As long as there is violence and repression and people determined to escape it, asylum seekers will be found among those who encounter danger on the high seas.

Looking to the future, the kind of negotiations and arrangements that defused the crisis of rescue in the Syrian refugee case could be codified into more general responsibility-sharing arrangements for the protection of refugees rescued at sea. This way, the shipping industry along with the masters and crews of ships would not be required to bear alone the burdens of applying international humanitarian laws and standards.



## HELP US HELP YOU

*Compiled by: Dy Comdt Pooja R Patel, 700 SQN (CG)*

Before I embark upon the task to write an article for 'safe water', as assigned, it is important that I stress upon my background so that the reader does understand as to why I am stressing upon certain aspects and not on others. I am a CPL entry pilot from the third batch of such Officers presently posted at CGAE (Kol) as a staff pilot, and hence my perspective would emphasize more from the pilots point of view.

Now, the aspect of safety, in today's context more so, as in common man's terminology is 'Everybody's Baby' and in the succeeding lines I would clarify what exactly I mean by this. Having flown for almost 2600 hours both in the East and the West Coast of India I can say with utmost confidence that by and large the Indian Coast Guard aircraft are equipped with world class surveillance equipment which can be called second to none. Not only are the aircraft equipped with state of the art equipment, the training of the aircrew and their dedication to service is beyond doubt better than the best. If so is the case, some of us may now wonder why is it that still lives are lost at sea. It is here that the term 'everybody's baby' gains significance in my article. Let me give an example here, in the so called developed world it is said that the police force has better equipment etc., but the point to note here is that the vulnerable party is also better equipped to forewarn the force and help them identify the enemy/ attackers viz-a-viz the effected party.

Having flown extensive maritime resonance sorties I feel it is evident that there is lack of effort by the vulnerable populace in the maritime domain towards the safety of their workforce and machinery especially so in the owners of the fishing boats. Wherein, there are now state of the art equipment,

which are cost effective and available off the shelf and can be used by them. Some of these equipment could be used by fishing boats to help the surveillance aircraft to easily identify and locate them. Furthermore electronic aids like AIS differentiate them and classify them for saving precious lives.

Imagine a real time situation where there are more than hundred fishing boats in a cluster wherein a boat commandeered by antinational elements intermingles. In such case, specially during night time, it would be virtually impossible for a Dornier to locate the object despite the state of the art equipment. In effect, in such a situation, the Dornier and its entire state of art machinery would be quite literally rendered incapable to tackle the situation at hand. Why a group, even classifying a lone boat with a minimal quantum of certainty is a herculean task. In the same scenario if however the boats were equipped with identifying equipment it would be an easy task for the aircraft to identify, isolate and enable apprehension of the hostile vessel. Further, persons at the helm of the fishing boats at sea, need to be given basic classes on position reporting and exploiting their VHF sets to communicate effectively with the patrol aircraft. This too would enable passing crucial weather updates and ease authentication by simplistic verbal dialogue.

What I have just depicted above, am sure is common knowledge, but I often wonder how effective the efforts put in by us and the tech-savy expensive equipment onboard our aircraft would be. If we could just get over the herculean task of educating the fishermen and make it compulsory for concerned people to comply with the norms. For they have to be made to understand that this minimal investment will not only help them reap greater profits in the long term by keeping their men and machinery safe but also contribute to the security of nation.

## GLIMPSES OF XV NMSAR BOARD MEETING - 2016



Chairman receiving Dr. Harsh Vardhan, Hon'ble Minister for Ministry of Science & Technology and Earth Sciences, Chief Guest during XV NMSAR Board Meeting



Hon'ble Minister being welcomed by Chairman, NMSARB



Chairman, NMSARB delivering welcome address



NMSAR Board Members at the XV Board Meeting



Dr. Harsh Vardhan, Hon'ble Minister for Ministry of Science & Technology and Earth Sciences inaugurating the SAR Aid Tool (SARAT)



Dr. SSC Shenoi, Director INCOIS, Hyderabad delivering presentation on SARAT





Felicitation of Dr. NK Shrivastava, Dy Director, ISTRAC for his contribution to Satellite Aided SAR services



Chairman, presenting the SAR Award for Fishermen to Shri Moka Naganna, Master of MFB Regn. No. IND/AP/K2/MM/06



Chairman, presenting the SAR Award for the Govt Owned Unit to Commanding Officer C-410



Chairman, presenting the SAR Award for the Merchant Vessel to MV Hafnia Asia



Chairman, presenting the SAR Award for Govt Owned Unit to CSG Boat, Tamil Nadu



Chairman, NMSARB interacting with Board Members



## INCOIS DEVELOPS SARAT (SEARCH AND RESCUE AID TOOL) TO SAVE LIFE AND PROPERTY AT SEA

Dr. Harsh Vardhan, Hon'ble Minister of Science & Technology and Ministry of Earth Sciences dedicated the **SARAT**- The Search And Rescue Aid Tool to the nation during the XV National Maritime Search and Rescue (NMSAR) Board meeting held in Vigyan Bhavan, New Delhi on 27 July 2016. Launching of SARAT was held in presence of Chairman, NMSAR Board, DG Rajendra Singh, PTM, TM, Director General Indian Coast Guard. SARAT is developed by scientists of INCOIS, Hyderabad and is used in aiding search efforts of missing objects at sea by identifying the most probable area for search operations.

Conducting search and rescue operations at sea is an extremely challenging and can be compared to the proverbial searching for a needle in the hay stack. This is more challenging in the Indian context, where the fishermen venture out into the sea, with inadequate life saving appliances. Thus, fishermen are exposed to various challenges thrown by the sea. In case of an accident, it is extremely important to trace the boat / fishermen expeditiously to save lives. SARAT system is thus designed to find out the most probable search area for missing persons / objects at sea.



SARAT is already assisting the Indian Coast Guard in their operations to minimize loss of life, injury, and property at sea. The user is able to select 60 types of missing objects such as person in water, liferaft, fishing boat, aircraft, surf boat, sail boat etc. Users can also select a specific point where the object was last known to be present using an interactive map or they can select a coastal location, distance travelled and bearing angle so that the datum is calculated. The results generated are shown in an interactive map depicting the probable area to be searched which can also be sent as a text message.

The model uses assembling the factors that accounts for the uncertainties in the initial location and time the object was missing. Current and wind acts as the driving force for the missing object. Thus, the model is fed with currents and winds data derived from very high resolution models run in Super Computers or High Performance Computers.

The system can predict the search location up to 10 days. The accuracy of SARAT has been validated using the drifting buoys and other objects deployed at sea.



## **Safe Waters**

An Indian Coast Guard Publication

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